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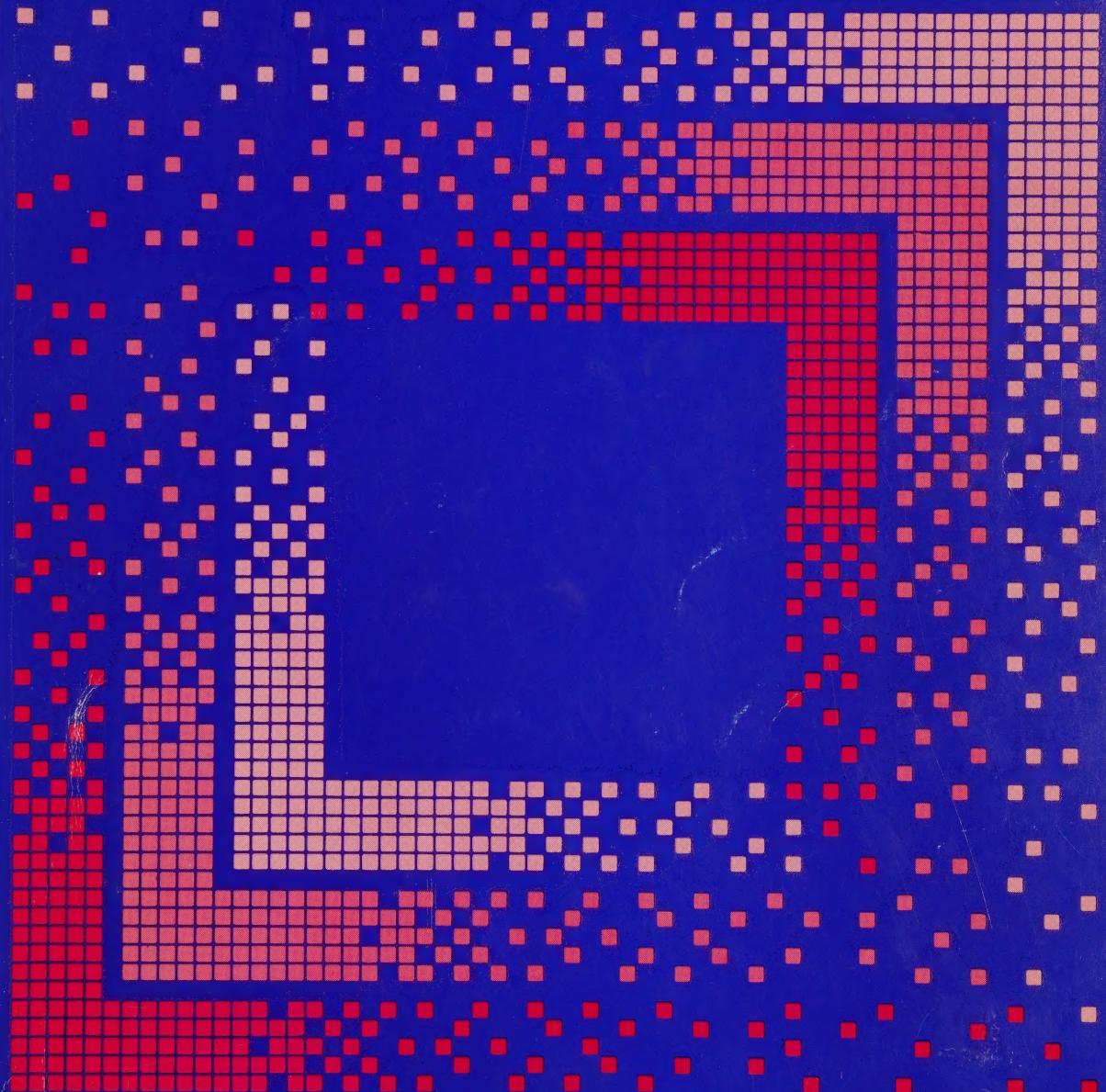
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Human resource challenges of education, computers and retirement



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Human resource challenges of education, computers and retirement

Graham S. Lowe
University of Alberta

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PREFACE

The General Social Survey has two principal objectives: first, to gather data on social trends in order to monitor changes in Canadian society over time, and second, to provide information on specific social issues of current or emerging interest.

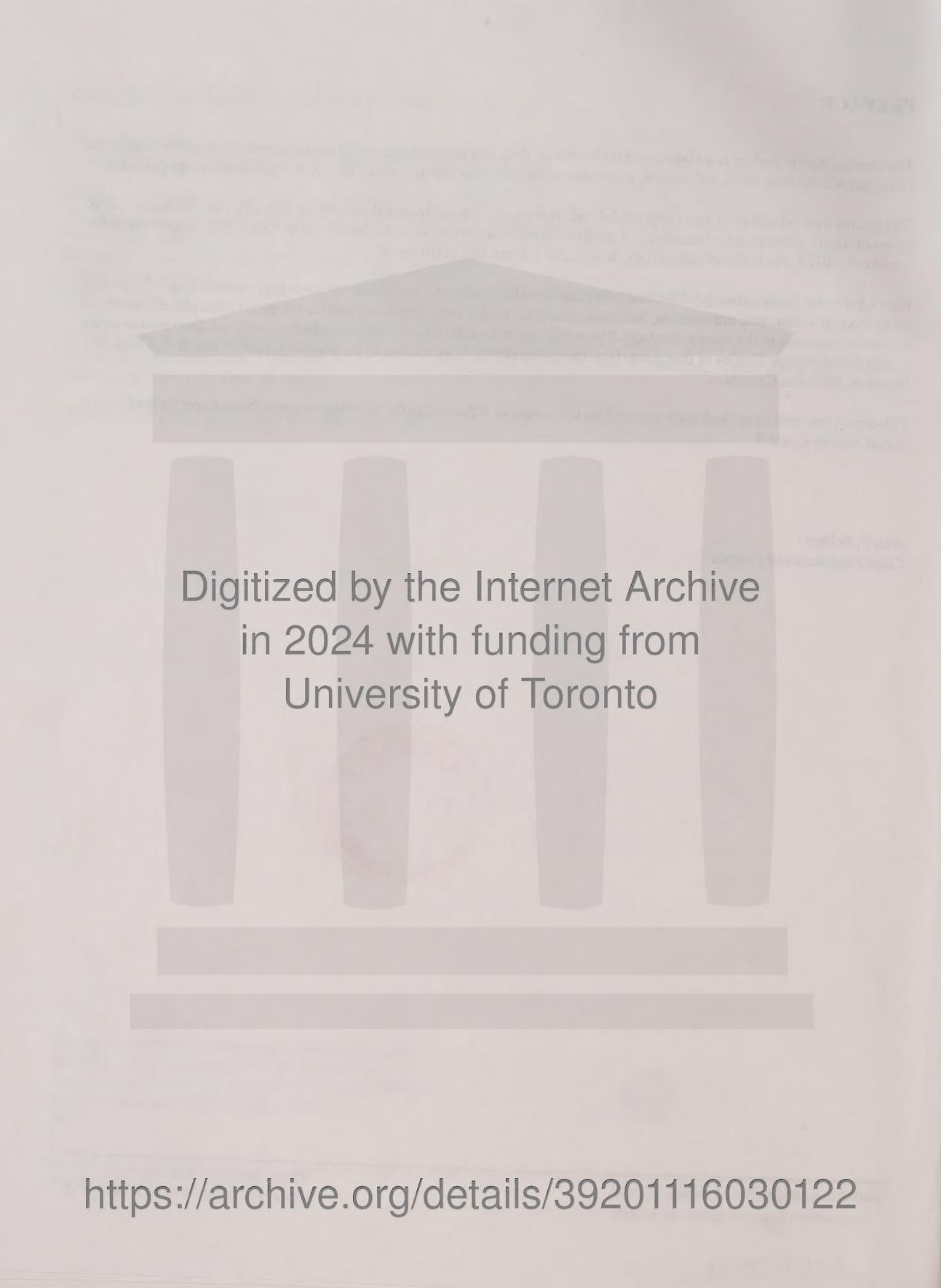
The fourth annual cycle of the General Social Survey, which collected data during January and February 1989, concentrated on work and education. A data file from this survey was released in July 1990. This report provides a more detailed analysis of education, work, computers and retirement.

In recognition of the broad scope of the data being produced by the General Social Survey, as well as the wide range of expected users from governments, universities, institutes, business, media and the general public, the project has placed particular emphasis on access to the survey database. The public use microdata file allows researchers to carry out their own analysis of this rich database. Copies of this microdata file can be obtained by writing to the Housing, Family and Social Statistics Division, Statistics Canada.

This report was written by Graham S. Lowe of the University of Alberta. Ghislaine Villeneuve was the manager for the General Social Survey Cycle 4.

Ivan P. Fellegi
Chief Statistician of Canada





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CHAPTER 1

INTRODUCTION

The fourth General Social Survey (GSS), completed by Statistics Canada in the first few months of 1989, was developed around the general topic **Work and Education: Toward the Year 2000**. A total of 9,338 individuals were surveyed, representing the non-institutionalized population (aged 15 and over) of the 10 provinces. The response rate for this telephone survey was 80%.

Respondents in the 1989 GSS were questioned about a range of topics, including: education and work histories; current employment and educational activity; job satisfaction and other more material rewards from employment; education, work and retirement plans; experiences with new workplace technologies; and interest in science and technology. These questions addressed three general themes: *patterns and trends in work and education; new technologies and human resources; and work in the service economy*. This report focuses on the first two themes.

1.1 HIGHLIGHTS OF THE REPORT

Education and human resources (Chapter 2)

- Before 1950, only 4% of those entering studies for their highest degree or diploma reported their main activity in the previous year had been working at a job or business; by the 1980s, this increased to 28%.
- In 1989, one in four Canadians aged 15 and over planned to begin an educational program leading toward a degree, diploma or certificate in the next five years.

Developing human resources: the links between education and employment (Chapter 3)

- In 1989, 3.2 million, or 26% of the employed, planned to begin an educational program leading to a degree, diploma or certificate in the next five years.
- 1.7 million, or 14% of those employed, were enrolled in an educational program leading to a degree, diploma or certificate.
- About half of the employed who were enrolled in an educational program chose their field of study either to improve their present career or to change careers, while

20% made the choice because of an interest in the subject.

- Substantial numbers of workers were in jobs requiring less than their level of education. For example, 21% of individuals with postsecondary diplomas were in jobs requiring a high school diploma.
- 36% of the employed were in jobs closely related to their education, while 43% reported no relationship in this regard.

Computers (Chapter 4)

- In 1989, 6.4 million Canadians, about one-third of those aged 15 and over, had taken a course on computer use.
- 9.6 million Canadians, or 47% of the adult population aged 15 and over, were able to use a computer.
- Ability to use a computer was highest among residents of Alberta, British Columbia and Ontario, and among individuals under age 25.
- Playing computer games was the most common use of a computer during the 12 months prior to the 1989 GSS,

reported by 73% of users, followed by data entry and word processing (63%), record-keeping (48%), data analysis (32%) and programming (26%).

Computers in the workplace (Chapter 5)

- More than one-third of those employed at the time of the 1989 GSS (4.2 million individuals) reported using computers, such as mainframes, personal computers, or word processors in their job.
- 29% of the employed reported that their work had been greatly affected by the introduction of computers or automated technology in the last five years, whereas 41% encountered no effects at all.
- Two-thirds of workers whose jobs had been greatly or somewhat affected by technological change during the 1984-1989 period, reported increased skills as a result.

Retirement (Chapter 6)

- In 1989, only one in three employed Canadians supported the idea of mandatory retirement, with 60% of these individuals believing that the age should be less than 65.
- Among the employed, 43% intended to retire before age 65, whereas 34% had no planned retirement age and 14% planned to retire at age 65.
- Only 28% of the formerly employed retired because they had reached mandatory retirement age. Health reasons were an equally important cause of retirement cited by 27%.
- 43% of retirees enjoyed life more after retiring than before and 17% enjoyed retired life less.

1.2 INTRODUCTION AND OVERVIEW

Canada will enter the 21st century as a service society struggling to adapt to a new global economic order. Canada's ability to thrive in a fundamentally restructured and intensely competitive international economy, while at the same time continuing to enhance Canadians' quality of life, depends largely on better harnessing the nation's human resources. Indeed, there is a broad consensus that human resource development is of utmost priority as both an economic and a social objective.¹⁻⁷

This report examines findings from the 1989 General Social Survey (GSS) which are relevant to the development of Canada's human resources. Three major themes guide

the analysis: the changing relationship between work and education, computer literacy and use, and retirement attitudes and behaviour.

There are good reasons for selecting these themes. For instance, growing concerns about how effectively available human capital is being used requires a fuller understanding of the linkages between the labour force and educational system. Accelerating technological innovation — and acknowledged importance of "high-tech", knowledge-intensive industrial development — demands a more thorough knowledge of computer use and training. Equally essential, is the need to know more about the working population's attitudes and plans about retirement — especially in light of a declining youth population, an aging baby-boom generation, and other socio-demographic changes which are likely to reduce the supply of labour.

In other words, these three themes stand out under the 1989 GSS general topic of "work and education" because they highlight how the changing economy and labour market has affected Canadians' work-related attitudes and behaviours. As such, they pose major challenges for employers, employees, unions and policy-makers in the 1990s. In this respect, the 1989 GSS made a valuable contribution to the understanding of how Canada was utilizing its available human capital.

Education is a means for developing Canada's human resources. The rising educational attainment of the younger generation is a well-known trend. But also vital for the country's economic future is the on-going education and training of labour force participants. At issue is more than just the rising educational attainment of the population, although this is a healthy indicator of the nation's adaptability to the emerging information-intensive global economy.

In Chapter 2, the 1989 GSS was used to assess the educational attainment, current enrollment patterns and future educational plans of Canadian adults. What is striking was how postsecondary education in particular was being actively sought by employed baby boomers, suggesting a movement toward life-long education.

This report pursues these issues in Chapter 3, focusing on the connections between an individual's job and education. The chapter is concerned with two issues: first, educational upgrading among the employed labour force; and second, the "fit" between existing credentials and job requirements. The specific questions addressed included educational activities of the employed; their reasons for obtaining this education; plans for further education; the relationship between one's education and job; underemployment (or

overqualification); and the links between educational utilization on the job and quality of work life.

This report also takes a more detailed look at computer skills and training, which is fast becoming a key component of education. Chapters 4 and 5 document the extent to which Canadian adults and the work force in particular, are participating in the computer revolution.

Chapter 4 focuses on what may be referred to as "computer literacy". How many Canadians can use computers and what basic tasks can they perform? Who has received computer training? What is the extent and use of computers in the home? Finally, how do Canadians perceive the impact of science and technology on their lives — a highly relevant question considering that these attitudes reflect receptivity to technological change.

The use and impact of computers in the workplace are investigated in Chapter 5. It begins by documenting the industrial and occupational patterns of on-the-job computer use. Next, it addresses current debates about whether automation has positively or negatively affected the skills, security and intrinsic interest in workers' jobs. This entire discussion highlights concerns about who is benefitting from recent advances in automation.

Chapter 6 takes up a rather different human resource issue, namely retirement. At first glance, retirement may seem unrelated to earlier discussions of education and work, computer literacy or the impact of automation in the workplace. But it is difficult to imagine any comprehensive analysis of Canada's human resources overlooking the implications of an aging population. In short and in many ways, retirement touches on human resource utilization. The chapter begins by assessing the extent of support for mandatory retirement and proceeds to consider retirement plans of the employed. Clearly, the trend toward "early" retirement has a direct bearing on employers' labour recruitment and retention strategies in the face of predicted labour shortages later in the decade. Also of interest is when and why retired individuals left the labour force. Access to private (i.e. employer-sponsored) pensions is examined, both among the employed and retired. Finally, retirees' quality of life is briefly assessed.

This report offers an overview of several interrelated human resource issues which are of immediate national concern. The report alerts Canadians to the increasing importance of life-long education, the need to fully utilize and continually enhance skills of the labour force, the emerging computer literacy and adaptation to automation on and off the job and implications of an aging work force

for retirement and pension policy. These are formidable public policy challenges. How Canadians individually and collectively meet these challenges will chart the nation's social and economic course into the next century.

1.3 OVERVIEW

1.3.1 Objectives

The General Social Survey was initiated by Statistics Canada in order to reduce gaps in the statistical information system, particularly in relation to socio-economic trends. Many of these gaps could be filled through existing data sources or vehicles because of the range or periodicity of the information required, or lack of capacity of relevant vehicles.

The GSS has two principal objectives: first, to gather data on trends in Canadian society over time, and second, to provide information on specific policy issues of interest. To meet these objectives, the General Social Survey was established as a continuing program with a single survey cycle each year.

1.3.2 Content

The GSS gathers a wide variety of data to meet different kinds of needs for a very broad spectrum of users. To achieve the objectives outlined above, the GSS has three components: Core, Focus and Classification.

Core content is directed primarily at monitoring long-term social trends by measurement of temporal changes in living conditions and well-being. Main topics within Core content include health, time use, personal risk, work and education, and family and social support. As all Core content topics cannot be treated adequately in each survey cycle, a single cycle covers a specific topic, which recurs on a periodic basis. The Core content of the 1989 General Social Survey, the fourth cycle, was work and education.

Focus content is aimed at meeting the second objective of the General Social Survey, namely to provide information touching directly on a specific policy issue or social problem, such as youth unemployment. In comparison to Core content, Focus is more specific to immediate policy issues. For the fourth cycle of the General Social Survey, there was no Focus content.

Classification content provides the means of delineating population groups and is used in the analysis of Core and Focus data. Examples of classification variables are age, sex, education and income.

Because of the broad scope of the survey, this report can only present an overview of the data collected and indicate the potential of the data base. A public use microdata tape is available to facilitate further analysis. To purchase this tape or for further information, please contact:

General Social Survey
Housing, Family and Social Statistics Division
Statistics Canada
Ottawa, Ontario
K1A 0T6
(Telephone (613) 951-4995)

1.3.3 Sample design

The target population of the 1989 GSS consisted of all individuals aged 15 and over living in the 10 provinces of Canada, with the exception of full-time residents of institutions.

The population was sampled using random digit dialling techniques and interviewed by telephone, thus excluding from the sample those persons living in households without telephones. These households account for less than 2% of the target population. The sample was allocated to provinces in proportion to the square root of the size of their populations, and to strata within provinces in proportion to their population. The total sample size of 9,338 respondents was large enough to allow extensive analysis at the national level, some analysis at a regional level and limited analysis at a provincial level.

Appendix I contains additional information on the sample design and estimation procedures.

1.3.4 Data collection and forms

Data collection took place in January and February 1989. Data were collected from 9,338 respondents aged 15 and over. There were 2,390 non-responses, for a total sample size of 11,728. Copies of the questionnaires used are shown in Appendix II.

Data were collected on two forms. The Selection Control Form (GSS 4-1) was used to ensure that the telephone number reached belonged to an eligible household, to record some demographic data for each household member (age, sex, marital status and relationship to a reference person) and to randomly select a respondent aged 15 or over. Only one respondent per household was selected. The Education and Work Questionnaire (GSS 4-2), composed of the Core content questions and the Classification content questions, was then administered. No proxy responses to the questionnaire were accepted.

1.3.5 Data processing and estimation

Data capture personnel in the Statistics Canada regional offices keyed data directly from the survey questionnaires into minicomputers. These data were then transmitted electronically to Ottawa. All survey records were subjected to an extensive computer edit. Partial non-responses and flow pattern errors were identified. Missing or incorrect data were recoded as "not stated" or, in a very few cases, imputed from other areas in the same questionnaire.

Each person in a probability sample can be considered to represent a number of others in the surveyed population. In recognition of this, and utilizing sample design information, each survey record was assigned a weight that reflected the number of individuals in the population that the record represented. These weights were adjusted for non-response and for the differences between the target population and the surveyed population using population counts for the target population. The estimates presented in this report were calculated using the adjusted weights.

More information on the sampling and estimation procedures can be found in Appendix I.

1.3.6 Data limitations

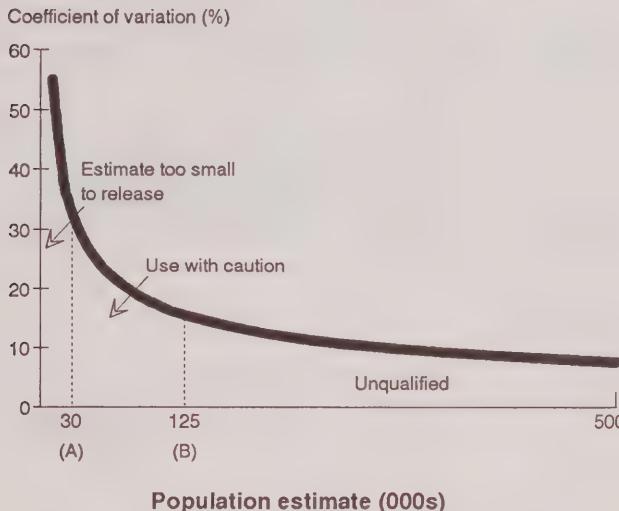
It is important to recognize that the figures which appear in this report are estimates based on data collected from a small fraction of the population (roughly one person in 2,000) and are subject to error. The error can be divided into two components: sampling error and non-sampling error.

Sampling error is the difference between an estimate derived from the sample and the one that would have been obtained from a census that used the same procedures to collect data from every person in the population. The size of the sampling error can be estimated from the survey results and an indication of the magnitude of this error is given for the estimates in this report. Figure A shows the relationship between the size of an estimate and its sampling error (expressed as the coefficient of variation: the ratio of the standard deviation to the estimate). If the estimated sampling error is greater than 33% of the estimate, it is considered too unreliable to publish and the symbol '—' is printed in table cells where this occurs. In terms of Figure A, all estimates below point (A) on the estimate axis fall into this "unreliable" category. Although not considered too unreliable to publish, estimates with an estimated error between 16.5% and 33% of the related estimate should be "qualified" and used with

FIGURE A

Estimated sampling variability by size of estimate, Canada

Core sample, persons 15 years and over



General Social Survey, 1989

Note: Only coefficients of variation (c.v.) applicable to estimates for Canada as a whole are shown in Figure A.

The difference between the true population size and the estimated population size (expressed as a percentage of the estimate) will be less than the c.v. 68% of the time, less than twice the c.v. 95% of the time and less than three times the c.v. 99% of the time.

caution. All estimates between points (A) and (B) on the estimate axis of Figure A fall into this "qualified" category.

All other types of errors, such as coverage, response, processing and non-response, are non-sampling errors. Many of these errors are difficult to identify and quantify.

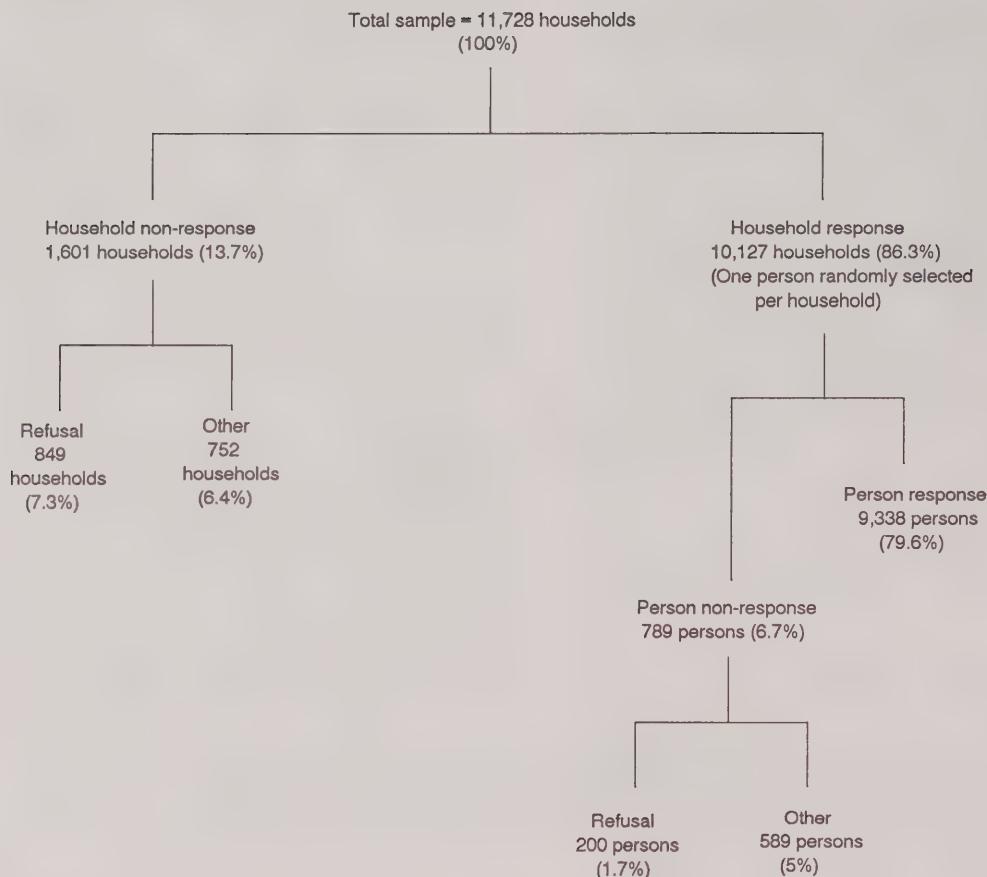
Coverage errors arise when there are differences between the target population and the surveyed population. Households without telephones represent a part of the target population that was excluded from the surveyed population. To the extent that this excluded population differs from the rest of the target population, the estimates will be biased. Since these exclusions are small, one would expect the biases introduced to be small. However, since there are correlations between a number of questions asked on this

survey and the groups excluded, the biases may be more significant than the small size of the groups would suggest.

Individuals residing in institutions were excluded from the surveyed population. The effect of this exclusion is greatest for people 65 years and over where it approaches 9% of this age group.

In a similar way, to the extent that the non-responding households and persons differ from the rest of the sample, the estimates will be biased. The overall response rate for the survey was 80%. Non-response could occur at several stages in this survey. There were two stages of information collection: at the household and individual levels. As is shown in Figure B, about 67% of non-response occurred at the household level. Non-response also occurs at the

FIGURE B
Response magnitudes and rates



General Social Survey, 1989

level of individual questions. For most questions, the response rate was high and, in tables, the non-responses appear under the heading "not stated".

While refusal to answer specific questions was very low, accuracy of recall and ability to answer some questions completely can be expected to affect some of the results presented in the subsequent chapters. Awareness of exact question wording (Appendix II) will help the reader interpret the survey results.

Since the survey is a cross-sectional survey, caution is required in making causal inferences about the association between variables. Observed associations may be a reflection of differences between cohorts, period effects, differences between age groups or a combination of these factors.

NOTES

1. Canada Employment and Immigration. *Success in the Works: A Profile of Canada's Emerging Workforce*. (Ottawa: CEIC, 1989).

2. Canadian Chamber of Commerce. *Focus 2000: Report of the Task Force on Harnessing Change*. (Canadian Chamber of Commerce, 1988).
3. Canadian Council on Social Development. *The Future of Work Project: Final Report*. (Ottawa: CCSD, 1989).
4. Economic Council of Canada. *Employment in the Service Economy*. (Ottawa: Supply and Services Canada, 1991).
5. Economic Council of Canada. *Innovation and Jobs in Canada*. (Ottawa: Supply and Services Canada, 1987).
6. Canadian Labour Market and Productivity Centre. *Business and Labour Leaders Speak Out on Training and Education*. (Ottawa: CLMPC, January 1990).
7. Hudson Institute of Canada. *Workforce 2000: Competing in a Seller's Market: Is Canadian Management Prepared?*. (Montreal: Hudson Institute Canada and Towers Perrin, 1991).

CHAPTER 2

EDUCATION AND HUMAN RESOURCES

This chapter examines educational attainment, current educational enrollment and future educational plans as documented in the 1989 General Social Survey. By focusing on the rising level of education in the population, especially at the postsecondary level, the discussion emphasizes the increasing development of Canada's human resources.

2.1 HIGHLIGHTS

- In 1989, 19% of males and 5% of females aged 15 and over had completed an apprenticeship program.
- Before 1950, only 4% of those entering studies for their highest degree or diploma reported their main activity in the previous year had been working at a job or business; by the 1980s, this increased to 28%.
- One in ten Canadians aged 15 and over were enrolled in a postsecondary degree or diploma program at the time of the 1989 GSS.
- In the baby-boom cohort (aged 25-44), 36% of those enrolled in a postsecondary institution were pursuing undergraduate degrees, while 12% were pursuing graduate degrees. Very few individuals aged 45 and over were studying in postsecondary institutions.
- Individuals whose main activity was working at a job or business accounted for 62% of all postsecondary enrollments.
- The main motivation for individuals aged 25-44 to pursue higher education was to change or improve their careers.
- In 1989, one in four Canadians aged 15 and over planned to begin an educational program leading toward a degree, diploma or certificate in the next five years.

- 73% of adult Canadians were satisfied with their education, and this satisfaction increased with one's level of educational attainment.

2.2 INTRODUCTION

It is largely through education that a nation's human resources are developed. Canada has a commendable record in this respect. The average education of the population has been steadily rising and, compared to most other industrialized countries, Canadians are well-educated.

However, these observations should not breed complacency. The creation of a global economy, advance of automation and shift towards service industries and information-intensive work all present new challenges for education and training. Concerns about equality of access to educational opportunities remain. And the links between educational credentials and changing job demands continue to fuel debates about the value of "generalist" versus "vocational" forms of education.

With an eye to these issues, this chapter outlines the educational attainment of Canadians, their enrollment patterns and future educational plans. A prominent theme was the changing profile of the student body, from young full-time students to baby boomers, who were combining employment and education. By focusing on age and labour force status as key determinants of educational enrollment and plans, it becomes clear that education is no longer exclusively an activity for the young, but rather something growing numbers of adults are pursuing in phases over the life-course.

2.3 METHODS

The 1989 GSS asked several sets of questions in order to document respondents' educational patterns and attainment. The highest level of education attained was defined as the highest degree, diploma or certificate completed. Completed levels of education included: master's degree or earned doctorate; bachelor's or undergraduate degree or teacher's college; diploma or certificate from a community college, CEGEP (in Quebec only) or nursing school; diploma or certificate from a trade, technical or vocational school or business college; and elementary/high school diploma.

The survey also documented whether individuals had some university or other postsecondary education, but this information is not analyzed below. Furthermore, educational courses not leading toward a degree, diploma or certificate were excluded in this report.

Information on the completion of apprenticeships was collected in addition to a respondent's highest level of educational attainment. Therefore, a large majority of those with apprenticeships also reported a postsecondary or a high school diploma as their highest level of education.

The 1989 GSS attempted to shed light on the connection between a person's education and their employment. The survey asked respondents to report the major field of study or specialization for their degree, diploma or certificate (completed and/or currently being worked toward). Respondents were also asked the main reason for choosing this field of study. Possible responses included: to prepare for first career; to change careers; to improve careers; to improve earnings; because of interest in subject; and for some other reason.

The questionnaire also briefly documented how education, as an activity, fits into the life cycle of individuals. One section examined a respondent's activities after completing their highest level of education. A subsequent section investigated the period before a respondent began studies for her or his highest degree, diploma or certificate.

The sequencing of education in an individual's life was tapped by a question which documented main activity. Thus, respondents were asked which of the following best described their main activity before and after their education, as well as in the week prior to the 1989 GSS and

during 1988: working at a job or business; student; keeping house; retired; normally works at a job or business; and other.

The question on main activity did not provide a measure of labour force participation directly comparable to Statistics Canada's Labour Force Survey (LFS).

If three categories of main activity were combined — working at a job or business, looking for work, and normally works — a rough approximation of the labour force participation rate could be obtained. However, this estimate was slightly higher than the LFS' labour force participation rate for 1989.¹ Specifically, the 1989 GSS proxy labour force participation rate (i.e. calculated by combining currently employed, unemployed and those who normally work) was 68%, compared with 67% as determined by the LFS. Estimates of the size of the labour force was 20.2 million from the 1989 GSS and 20.1 million from the LFS. Estimates of the number of employed were also close, at 12.2 million from the GSS and 12.4 from the LFS.

When discussing an individual's main activity, it is important to recognize that student status does not preclude employment. Indeed, the majority of full-time postsecondary students hold part-time jobs.²

Respondents were asked if they planned to start an additional education or training program within the next five years. While the 1989 GSS was not designed to provide educational enrollment projections, it can be used to directly compare current and planned postsecondary fields of study. The fields of study were coded using "Major Field of Study Code Book, 1986 Census of Canada".

Furthermore, the survey asked respondents if they were satisfied with their education. This and other questions measuring a respondent's satisfaction with specific areas of her or his life, five response categories were used: very satisfied; satisfied; dissatisfied; very dissatisfied; and no opinion.

2.4 RESULTS

2.4.1 Main activities of the adult population

To set the stage for the discussion of educational patterns, it was useful to document the main activities of the

TEXT TABLE A

Population 15 years of age and over by main activity and sex then age group then province, Canada, 1989

Selected characteristics	Total population				Main activity					
			Employed		Looking for work		Student		Keeping house	
	No.	%	No.	%	No.	%	No.	%	No.	
(Numbers in thousands)										
Both sexes	20,248	100	12,155	60	1,112	5	1,178	6	2,550	13
Male	9,903	100	6,726	68	600	6	569	6	35	—
Female	10,345	100	5,428	52	512	5	609	6	2,516	24
All age groups	20,248	100	12,155	60	1,112	5	1,178	6	2,550	13
15-19	1,860	100	788	42	251	13	756	41	—	—
20-24	2,053	100	1,353	66	234	11	242	12	108	5
25-34	4,667	100	3,566	76	313	7	131	3	461	10
35-44	3,934	100	3,116	79	167	4	43	1	397	10
45-54	2,695	100	2,013	75	105	4	—	—	323	12
55-64	2,323	100	1,136	49	39	2	—	—	539	23
65 +	2,716	100	182	7	—	—	—	—	713	26
Province										
Canada	20,248	100	12,155	60	1,112	5	1,178	6	2,550	13
Newfoundland	427	100	166	39	42	10	40	9	79	19
Prince Edward Island	98	100	44	45	—	—	—	—	—	—
Nova Scotia	690	100	393	57	38	5	39	6	104	15
New Brunswick	551	100	301	55	35	6	33	6	77	14
Quebec	5,231	100	2,980	57	337	6	319	6	869	17
Ontario	7,469	100	4,802	64	294	4	454	6	761	10
Manitoba	829	100	499	60	39	5	40	5	95	12
Saskatchewan	749	100	431	58	52	7	38	5	95	13
Alberta	1,823	100	1,154	63	114	6	113	6	180	10
British Columbia	2,381	100	1,385	58	150	6	99	4	274	12

population aged 15 and over during the week prior to the survey in January and February 1989.

According to Text Table A, 68% of males and 52% of females reported their main activity was working at a job or business. In addition, 6% of males and 5% of females were looking for work (i.e. unemployed). Another 4% of males and 2% of females normally worked, but due to health, lay-off or other reasons, were temporarily unemployed. About 6% were students and approximately one in four females, and very few males, reported keeping house as their main activity. Fourteen percent of males and 9% of females stated that retirement was their main activity. Fewer elderly females may have reported being retired if their main activity had been keeping house.

Text Table A also provides a breakdown of main activity by age group. The table serves to confirm the fact that education, employment and retirement were age-based

activities. Specifically, 41% of Canada's 15-19-year-olds were students, and the proportion declined sharply with age. Twelve percent of 20-24-year-olds were students, compared with 3% of 25-34-year-olds and 1% of 35-44-year-olds.

With few exceptions, adults who had returned to the educational system on a more or less full-time basis were under the age of 45. Conversely, virtually no one under age 45 reported being retired. In contrast, three out of ten individuals aged 45 years and over were retired.

2.4.2 Educational attainment

Documenting educational attainment of the adult population is, in a sense, taking stock of Canada's human resources. On-the-job training and work experience are also key elements of a nation's human resources, but educational credentials are perhaps the most basic measure of this.

TEXT TABLE A

Population 15 years of age and over by main activity and sex then age group then province, Canada, 1989 — concluded

Selected characteristics	Main activity							
	Retired		Other		Normally works		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes	2,305	11	321	2	585	3	42	—
Male	1,362	14	201	2	379	4	31	—
Female	942	9	120	1	206	2	—	—
All age groups	2,305	11	321	2	585	3	42	—
15-19	—	—	—	—	46	2	—	—
20-24	—	—	28	1	88	4	—	—
25-34	—	—	44	1	149	3	—	—
35-44	—	—	65	2	127	3	—	—
45-54	57	2	84	3	88	3	—	—
55-64	479	21	63	3	62	3	—	—
65 +	1,765	65	27	1	26	1	—	—
Province								
Canada	2,305	11	321	2	585	3	42	—
Newfoundland	43	10	—	—	34	8	—	—
Prince Edward Island	—	—	—	—	—	—	—	—
Nova Scotia	84	12	—	—	—	—	—	—
New Brunswick	60	11	—	—	35	6	—	—
Quebec	472	9	102	2	130	2	—	—
Ontario	891	12	91	1	167	2	—	—
Manitoba	115	14	—	—	32	4	—	—
Saskatchewan	97	13	—	—	26	3	—	—
Alberta	179	10	31	2	52	3	—	—
British Columbia	354	15	40	2	77	3	—	—

General Social Survey, 1989

Looking at highest level of educational attainment in Table 1, 4% of the population aged 15 and over had a masters or doctoral degree. This amounted to 736,000 individuals, more than half a million of whom were male. One in ten of each sex, or over 2 million individuals, had an undergraduate degree (including teacher's college). Thus, a total of 2.8 million Canadians (14% of the population aged 15 and over) possessed a university degree.³

Postsecondary institutions, such as community colleges, CEGEPs in Quebec, technical, vocational and business colleges, had expanded rapidly in recent decades. As of early 1989, the highest level of education for almost 1.5 million Canadians was a diploma from a community college, CEGEP or nursing school. An even larger number of individuals, over 2.4 million, had as their highest level of education a diploma or certificate from a trade, technical

or vocational school or business college. When all individuals with postsecondary diplomas or certificates were combined, they comprised 19% of the adult population (almost 4 million individuals).

In terms of gender differences in postsecondary attainment, proportionally more males than females had a master's or doctoral degree. However, identical proportions of males and females had attained undergraduate degrees. Relatively more females had diplomas or certificates from community colleges, CEGEPS or nursing schools. The reverse held true with respect to diplomas or certificates from trade, technical and vocational schools.

Table 1 also shows that 28% of adult Canadians, proportionally more females than males, had a high school diploma as their highest level of education. However, a

much larger proportion (about 37% or 7.6 million individuals) had less than a high school diploma. Very few reported no formal education at all.

There are several interesting provincial variations in educational attainment reported in Table 1. Using the national average as the basis for comparison, the Atlantic provinces, Quebec, Manitoba and Saskatchewan had the largest proportions of individuals with less than high school - ranging from 41% in Manitoba to 48% in Prince Edward Island. By contrast, about one-third of residents in Alberta, British Columbia and Ontario had less than high school.

The highest levels of educational attainment showed that there was less provincial variation in the proportions having graduate or undergraduate degrees. Ontario and Nova Scotia had the largest proportions of individuals with graduate or undergraduate degrees; Newfoundland and New Brunswick had the lowest.

In terms of other postsecondary credentials, Ontario and Quebec were the only regions above the national average (7%) in the proportion of individuals with diplomas from community colleges, CEGEPs (which are only in Quebec) and nursing schools. Regarding trade, technical and vocational schools and business colleges, one in five persons from Newfoundland and Alberta had diplomas or certificates from those institutions. Residents of British Columbia, Nova Scotia and Saskatchewan were also above the national average (12%) in the percentages with this type of credential as their highest level of education.

2.4.3 Apprenticeship training

Canada's apprenticeship system is less developed than a number of other leading industrial nations, such as Germany, Austria or Great Britain. As an educational credential, apprenticeships are often overlooked. Apprenticeships are designed to provide job-specific training, typically for skilled manual trades. As such, they are a prerequisite for a healthy and diversified economy.

Nineteen percent of males and 5% of females aged 15 and over had completed an apprenticeship program (Figure C). This gender difference reflected the traditional male-dominance of blue-collar skilled trades in manufacturing and construction.⁴ In most provinces, less than 5% of

females had completed apprenticeships. Quebec was the major exception, where 9% of females had completed apprenticeships. Quebec also led the way among males, 28% of whom had apprenticeships. Alberta came second in this regard, with one in five males possessing this qualification (table not shown).

Figure C provides a breakdown of apprenticeships by age group and sex. Few 15-24-year-olds (about 6%) had completed apprenticeships. In both the 25-44 and 45 and over age groups, identical proportions of males and females — about one in five and one in twenty, respectively — had obtained apprentice credentials.

2.4.4 Age and educational attainment

Canadians are becoming better educated. This is evident from the age profile of educational attainment presented in Table 2. Teenagers in particular, and to a lesser extent youth in their early 20s, were still in the process of acquiring a formal education. A more meaningful comparison was between the baby-boom cohorts (ages 25-34 and 35-44) and the 45 and over cohort.

Baby boomers, especially 35-44-year-olds, had achieved significantly higher educational credentials than older individuals. Close to one in four 35-44-year-olds had a university degree. By contrast, 12% of those aged 45 and over had a university degree. In addition, over half of this older cohort had less than a high school diploma, which was more than twice the proportion of baby boomers in this lower educational attainment category.

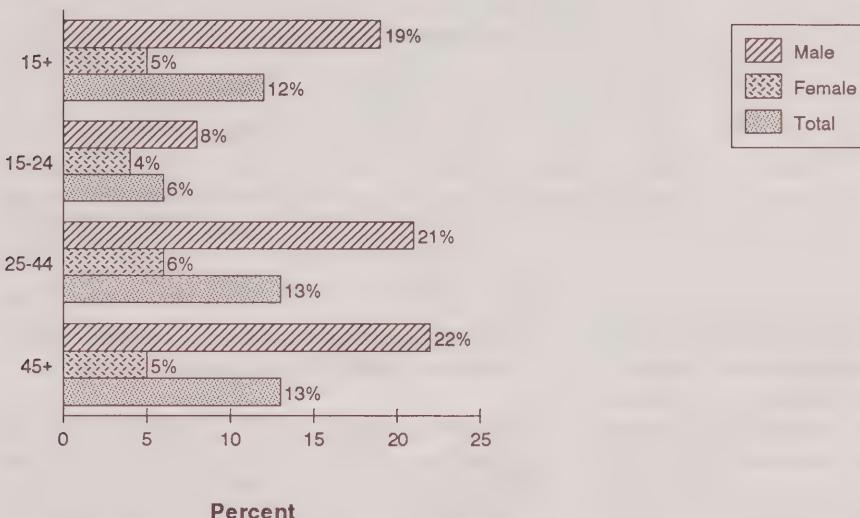
As Canadians acquire more education, they are doing so over longer periods of time, and by returning to obtain degrees or diplomas gain considerable work experience. Tables 3 and 4 offer a different perspective on the relationship between age and educational attainment just discussed.

Table 3 indicates that working at a job or business prior to entering the program that led toward a person's highest credential became more common after 1980. Some 28% of Canadians who started their studies after 1980 had worked at a job or business in the previous year, while two-thirds had been students. By comparison, the vast majority of those who began studies in 1949 or earlier had been students, while only 4% had been employed.

FIGURE C

Population 15 years of age and over who had completed an apprenticeship by age group and sex, Canada, 1989

Age group



General Social Survey, 1989

Table 4 focuses solely on individuals who completed a postsecondary degree or diploma. Over three-quarters of this sub-group, who commenced studies for their highest degree or diploma in 1949 or earlier, reported "student" as their main activity in the preceding 12 months. Only 17% had been working at a job or business. Yet by the 1980s, 45% of this subgroup had entered their final program of studies from the labour force. It should also be noted that in all the time periods examined, entering one's highest degree or diploma program from the labour force rather than from another educational program was more common among males than females.

These findings were reflected in other higher education trends. The 1980s witnessed dramatic increases in postsecondary enrollments as the student population became increasingly female, older and part-time.⁵ These changing characteristics of postsecondary students signal an extension into mid-life of the period during which individuals acquire formal education. Canadians,

especially baby boomers, were taking a more flexible and longer-term approach to education.

2.4.5 Age and enrollment

Having documented patterns of educational attainment among Canadians, it is useful to now examine their current postsecondary educational activity. One in ten Canadians aged 15 and over (1.9 million individuals) were enrolled in a postsecondary institution degree or diploma program at the time of the 1989 GSS (Text Table B). This enrollment was slightly higher among females (10%) than males (9%).

Table 5 reports the proportion of each major age group enrolled in specific postsecondary programs in early 1989. Only individuals with further education beyond elementary or high school were included. In other words, high school students still working toward graduation were excluded.

TEXT TABLE B

Population 15 years of age and over by enrollment in a postsecondary institution and sex, Canada, 1989

Sex	Total population		Currently enrolled in a postsecondary institution					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes	20,248	100	1,935	10	18,294	90	—	—
Male	9,903	100	920	9	8,972	91	—	—
Female	10,345	100	1,016	10	9,322	90	—	—

General Social Survey, 1989

At the time of the 1989 GSS in January and February 1989, 176,000 individuals were working towards masters or doctoral degrees. Just under 800,000 were pursuing undergraduate degrees. Overall, close to four in ten students were in undergraduate degree programs and 9% were in postgraduate programs. Community colleges, CEGEPS and nursing schools accounted for one-quarter of all enrollments. Trade, technical, vocational and business colleges and schools comprised another 19%.

Among those who were enrolled in a postsecondary institution, about 45% of 15-24-year-olds who had completed high school were enrolled in undergraduate programs. The next largest group (29%) was studying for a diploma or certificate at a community college, CEGEP or nursing school. While gender differences were minor, it should be noted that a higher proportion of females than males were at university.

In the baby-boom cohort (25-44-year-olds), 12% of those enrolled were pursuing post-graduate degrees and 36% sought undergraduate degrees. The proportions of each sex in postgraduate programs were roughly equivalent. However, there were relatively more females than males in undergraduate programs. Other non-degree, postsecondary programs accounted for the balance of enrollments in this age cohort.

Among those aged 45 and over, so few were enrolled at the time of the survey that reliable population estimates were not possible. The one exception was females registered in

undergraduate programs as they accounted for 42% of all enrollments in this older age cohort.

To round out this picture of age patterns of enrollments, it is useful to examine age composition of educational programs. Turning to age profiles in Table 5, it is observed that postgraduate students tended to be older. That is, 45% were between 25-34 years of age and another 20% were in the 35-44 age cohort.

Baby boomers were prominent in both undergraduate programs and postsecondary diploma and certificate programs. Younger baby boomers aged 25-34 comprised roughly 30% of enrollments in each of these programs, while the 35-44 age cohort made up between 13% and 18%, depending on the program. Overall, just under 1 million baby boomers accounted for about 48% of all postsecondary enrollments in early 1989.

2.4.6 Combining education and employment

During the 1980s, postsecondary students increasingly entered their studies from the labour force, not as continuing students. How evident is this trend in current enrollments? This question is addressed in Text Table C, which details the main activity of those individuals enrolled in postsecondary programs at the time of the 1989 GSS.

The major comparison provided in Text Table C is between individuals whose main activity was working at a job or

TEXT TABLE C

Population 15 years of age and over who were enrolled in a postsecondary institution by main activity and educational program, Canada, 1989

Educational program	Total enrolled population				Main activity							
	Employed		Looking for work		Student		Normally works		Other ¹			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Total	1,935	100	1,201	62	143	7	509	26	37	2	44	2
Graduate degree ²	176	100	127	72	—	—	47	27	—	—	—	—
Undergraduate degree ³	791	100	454	57	60	8	230	29	29	4	—	—
Community college diploma ⁴	484	100	263	54	42	9	156	32	—	—	—	—
Trade or technical diploma ⁵	374	100	261	70	36	10	66	18	—	—	—	—
Other	111	100	96	87	—	—	—	—	—	—	—	—

General Social Survey, 1989

¹ Includes individuals whose main activity in 1989 was keeping house, retired or other.

² Includes masters or earned doctorate.

³ Includes bachelor or undergraduate degree, or teacher's college.

⁴ Includes diploma or certificate from community college, CEGEP or nursing school.

⁵ Includes diploma or certificate from trade, technical or vocational school, or business college.

"Not stated" category of main activity has been omitted from table but numbers are included in calculation of totals and percentages.

business and those who were students. Those whose main activity was working accounted for more than 60% of enrollments in all types of postsecondary programs. About 26% of individuals who were currently enrolled reported that their main activity was being a student. Those who normally work accounted for almost 2% of enrollments. Very few retired individuals reported working toward a degree, diploma or certificate; however, this does not mean that the elderly were not postsecondary students. Rather, they were far less likely than younger individuals to enroll in a course for the purpose of obtaining a credential.

This picture of the main activities of enrolled students is consistent with age profile of enrollments (see Table 5). Of the 2 million individuals who were working towards a degree or diploma, 47% were in the 15-24 age group — traditionally the main source of students. However, 48% of enrollments were accounted for by individuals aged 25-44 years — traditionally those who would have "completed"

their education and be in the labour force. Only 6% of enrollments fell into the 45 and over age group.

In sum, the image of university or community college students as young people devoting themselves mainly to their studies, with a part-time job on the side, was no longer accurate. For a number of postsecondary students, the main focus of activity outside the educational institution was in the labour force. This is not to imply that education was any less important for this new group of students; rather, it signals a closer integration of work and education.

2.4.7 Reasons for choosing current field of study

Another important issue concerning current enrollments is why individuals choose their particular field of study. The 1989 GSS also examined the main reasons given for choosing one's field of postsecondary study. The majority of 15-24-year-olds were preparing for their first career,

while one in four claimed to be motivated primarily by an interest in the subject (Text Table D).

For baby boomers, these two reasons became much less important. For this cohort, the main motivation for education was to change or improve existing careers. In the 25-44 age group, females were more likely to want additional education in order to change careers; males tended to want to improve their present careers. Equivalently, small proportions of each sex mentioned improved earnings as their main reason. Due to the small number of individuals aged 45 and over that were enrolled, further analysis on this cohort was not possible.

2.4.8 Plans for further education

The 1989 GSS provided a unique opportunity to learn about Canadians' future educational plans. Table 6 shows that close to one in four Canadians aged 15 and over (over

4.9 million individuals) were planning further education or training in the next five years. There was no gender difference to speak of in these plans. Two-thirds of those who were students at the time of the survey had such plans, compared with 26% of those whose main activity was working at a job or business. Similar proportions of male and female students planned on more education, while among those who were working at a job or business, females were more likely to have these intentions.

Figure D outlines the type of educational credential those individuals wished to obtain when planning further education or training during the next five years. The largest group, accounting for one in four individuals who reported educational plans, comprised of those seeking an undergraduate degree. Another 11% wanted a postgraduate degree. Approximately 17% wanted to earn a diploma or certificate from a community college or CEGEP, and 18% aspired to a trade, technical, or vocational school or a

TEXT TABLE D

Population 15 years of age and over who were enrolled in a postsecondary institution by reason for current field of study, sex and age group, Canada, 1989

Sex and age group	Total enrolled population				Reason for current field of study											
	Prepare for first career		Change careers		Improve career		Improve earnings		Interest in subject		Other reason					
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)																
Both sexes																
Total	1,935	100	616	32	271	14	487	25	105	5	434	22	—	—	—	—
15-24	904	100	516	57	41	5	95	10	—	—	231	26	—	—	—	—
25-44	922	100	100	11	218	24	351	38	77	8	165	18	—	—	—	—
45 +	109	100	—	—	—	—	42	39	—	—	38	35	—	—	—	—
Male																
Total	920	100	339	37	88	10	245	27	45	5	195	21	—	—	—	—
15-24	462	100	285	62	—	—	34	7	—	—	119	26	—	—	—	—
25-44	430	100	54	13	69	16	193	45	38	9	74	17	—	—	—	—
45 +	27	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Female																
Total	1,016	100	277	27	183	18	242	24	60	6	238	23	—	—	—	—
15-24	442	100	231	52	27	6	61	14	—	—	112	25	—	—	—	—
25-44	492	100	46	9	149	30	157	32	39	8	90	18	—	—	—	—
45 +	81	100	—	—	—	—	—	—	—	—	36	45	—	—	—	—

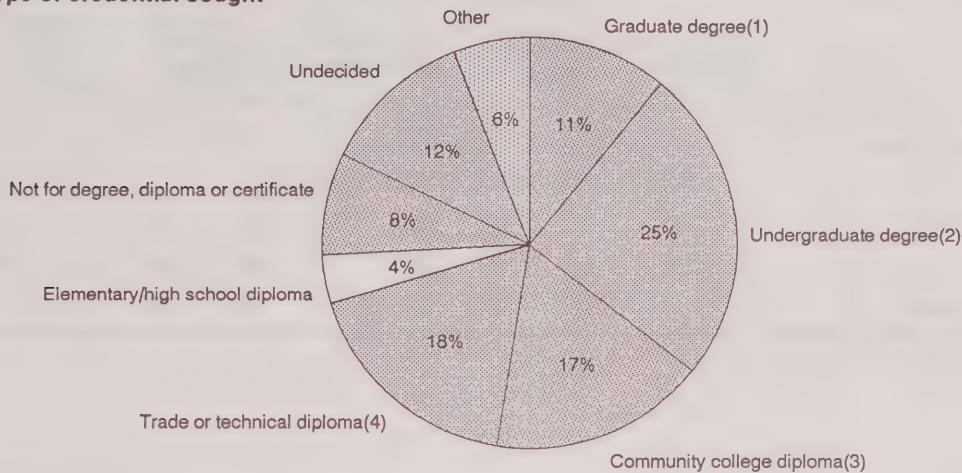
"Not stated" category of reason for current field of study has been omitted from table but numbers are included in calculation of totals and percentages.

General Social Survey, 1989

FIGURE D

Population 15 years of age and over who were planning further education in the next five years by type of credential sought, Canada, 1989

Type of credential sought



General Social Survey, 1989

(1) Includes masters or earned doctorate.

(2) Includes bachelor or undergraduate degree, or teacher's college.

(3) Includes diploma or certificate from community college, CEGEP or nursing school.

(4) Includes diploma or certificate from trade, technical or vocational school, or business college.

business college diploma or certificate. Relatively few (4%) were seeking a high school diploma.

In summary, Canadians had concrete educational plans for the immediate future, with a specific degree, diploma or certificate as their goal. Interestingly, only 12% had not decided what credential they eventually wanted to acquire; an even smaller proportion (8%) planned to take courses but not for the purpose of obtaining a degree, diploma or certificate.

Educational planners and employers will no doubt want to know the specific fields of study which Canadians are intending to enter. While the 1989 GSS was not designed to provide educational enrollment projections, it could be used to directly compare current and planned postsecondary fields of study.

Text Tables E and F make three key points in this regard. First, if all those individuals who planned in the next five years to enter a specific field of study actually do so, the result will be a huge jump in postsecondary enrollments. Second, there could be a general shift in specialization preference away from the humanities toward the health and engineering fields. Third, gender differences in fields of study are also likely to change. Proportionally fewer females will be studying the humanities, commerce, management or business administration, and agricultural or biological sciences. This will be offset by a shift of females towards social sciences, health fields, fine and applied arts, and engineering and applied science technologies and trades. Among males, there will also be small changes, mainly out of the humanities, social sciences, agricultural and biological sciences, and mathematical and physical sciences, and into the engineering and health fields.

TEXT TABLE E

Population 15 years of age and over who were enrolled in a postsecondary institution by field of study and sex, Canada, 1989

Sex	Total enrolled population				Current postsecondary field of study							
			Education/recreation/counselling services		Fine and applied arts		Humanities/related fields		Social sciences/related fields		Commerce/management/business administration	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Both sexes	1,935	100	178	9	99	5	187	10	271	14	508	26
Male	920	100	56	6	44	5	61	7	124	13	226	25
Female	1,016	100	122	12	54	5	125	12	147	14	282	28

TEXT TABLE F

Population 15 years of age and over who planned to study at a postsecondary institution by future postsecondary field of study and sex, Canada, 1989

Sex	Total population				Future postsecondary field of study							
			Education/recreation/counselling services		Fine and applied arts		Humanities/related fields		Social sciences/related fields		Commerce/management/business administration	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Both sexes	3,475	100	307	9	180	5	166	5	500	14	814	23
Male	1,684	100	101	6	64	4	75	4	198	12	394	23
Female	1,791	100	206	11	116	6	92	5	302	17	420	23

2.4.9 Satisfaction with education

The final topic examined was how Canadians evaluated their education in overall terms. Specifically, the 1989 GSS asked respondents if they were satisfied with their education.

Of the adult population, 73% stated that they were satisfied with their education. Males were slightly more satisfied in this regard than females. More significant, however, were

variations by main activity. Among the unemployed and individuals who were keeping house, 63% were satisfied with their education. Three out of four individuals who worked at a job or business reported being satisfied. And over 90% of individuals whose main activity was being a student were satisfied (table not shown).

Levels of satisfaction were closely associated with one's educational attainment. Indeed, 96% of those with graduate degrees were satisfied with their education, as were just

TEXT TABLE E

Population 15 years of age and over who were enrolled in a postsecondary institution by field of study and sex, Canada, 1989 — concluded

Sex	Current postsecondary field of study											
	Agriculture/ biological sciences/ technologies		Engineering/ applied sciences/ technologies/ trades		Health professions/ sciences/ technologies		Mathematical/ physical sciences		Other specializations		Not stated	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Both sexes	92	5	297	15	119	6	111	6	61	3	—	—
Male	34	4	248	27	—	—	79	9	29	3	—	—
Female	58	6	49	5	105	10	32	3	32	3	—	—

General Social Survey, 1989

TEXT TABLE F

Population 15 years of age and over who planned to study at a postsecondary institution by future postsecondary field of study and sex, Canada, 1989 — concluded

Sex	Future postsecondary field of study											
	Agriculture/ biological sciences/ technologies		Engineering/ applied sciences/ technologies/ trades		Health professions/ sciences/ technologies		Mathematical/ physical sciences		Other specializations		Not stated	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Both sexes	112	3	595	17	290	8	195	6	95	3	222	6
Male	46	3	502	30	42	2	126	7	36	2	100	6
Female	65	4	93	5	248	14	69	4	59	3	121	7

General Social Survey, 1989

over 90% of those with undergraduate degrees (Figure E). However, only six in ten individuals with less than a high school diploma were satisfied with their education. Admittedly, this is a very general evaluation of the education Canadians had received. The next chapter probes this issue more deeply by investigating the fit between employment and education.

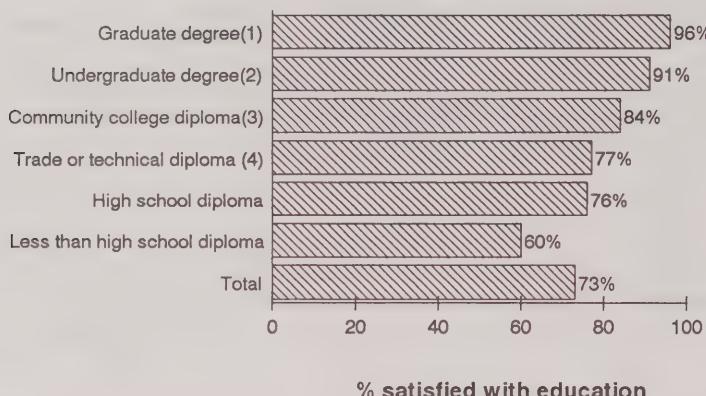
2.5 DISCUSSION

This chapter documents important continuities and changes in educational patterns. The findings all point in the direction of greater development of Canada's human resources. The emphasis has been on the rising level of education in the population, especially at the postsecondary level.

FIGURE E

Population 15 years of age and over by satisfaction with educational attainment and highest level of education attained, Canada, 1989

Educational attainment



General Social Survey, 1989

(1) Includes masters or earned doctorate.

(2) Includes bachelor or undergraduate degree, or teacher's college.

(3) Includes diploma or certificate from community college, CEGEP or nursing school.

(4) Includes diploma or certificate from trade, technical or vocational school, or business college.

This focus is not meant to down-play problems surrounding low educational attainment, such as those faced by high school drop-outs or the growing concern about basic literacy skills.⁶⁻⁸ Employment, education and retirement remain largely age-specific phenomena. However, the relationship between employment and education clearly is being transformed. In particular, baby boomers are at the forefront of a trend that undoubtedly will see increasing numbers of Canadians over the age of 25 returning to obtain postsecondary education.

What this means is that Canadians were acquiring higher levels of education than previously, and doing so over a longer phase of life. By 1989, educational attainment had risen to the point where about 14% of adult Canadians had a university degree and another 19% had a postsecondary diploma or certificate.

The level of education was even higher among the baby-boom cohort. And this age group was also actively pursuing additional education, making up almost half of all postsecondary enrollments. Also indicative of the changing character of participation in higher education was the fact that individuals whose main activity was in the labour force comprised a majority of enrollments.

Canadians' commitment to the value of higher education was readily apparent in their future educational plans. One in four planned to embark upon further education or training by 1994. Thus, despite being relatively satisfied with their education, more Canadians were banking on achieving their career objectives by returning to school. This increasingly prominent connection between one's job and education is the subject of the next chapter.

NOTES

1. *Perspectives on Labour and Income*, (Ottawa: Statistics Canada, Spring, 1990), p. 86-87.
2. Krahm, Harvey and Graham S. Lowe. "Transitions to work: findings from a longitudinal study of high school and university graduates in three Canadian cities." in *Making Their Way: Education, Training and the Labour Market in Canada and Britain*, eds. D. Ashton and G.S. Lowe. (Toronto: University Press, 1991).
3. The noted increase is likely in part due to the coding of the highest level of education in the survey versus the census.
4. Shea, Catherine. "Changes in women's occupations." *Canadian Social Trends*, (Ottawa: Statistics Canada, Autumn 1990), p. 21-23. This reflects the gender-segregated structure of the labour force.
5. Statistics Canada. *Education in Canada: A Statistical Review for 1988-89*. (Ottawa: Statistics Canada, 1990).
6. Economic Council of Canada. *Good Jobs, Bad Jobs: Employment in the Service Economy*. (Ottawa: Supply and Services Canada, 1990), p.19-20.
7. Statistics Canada. *Adult Literacy in Canada: Results of a National Study*. (Ottawa: Statistics Canada, 1991).
8. Canadian Labour Market and Productivity Centre. "Business and labour leaders speak out on training and education." (Ottawa: CLMPC, January 1990).

TABLE 1

Population 15 years of age and over by educational attainment, province and sex,
Canada, 1989

Province and sex	Total population		Educational attainment					
	No.	%	Graduate degree ¹		Undergraduate degree ²		Community college diploma ³	
			No.	%	No.	%	No.	%
(Numbers in thousands)								
Canada								
Both sexes	20,248	100	736	4	2,096	10	1,477	7
Male	9,903	100	509	5	1,034	10	553	6
Female	10,345	100	227	2	1,062	10	925	9
Newfoundland								
Both sexes	427	100	—	—	33	8	—	—
Male	211	100	—	—	—	—	—	—
Female	216	100	—	—	—	—	—	—
Prince Edward Island								
Both sexes	98	100	—	—	—	—	—	—
Male	48	100	—	—	—	—	—	—
Female	50	100	—	—	—	—	—	—
Nova Scotia								
Both sexes	690	100	33	5	78	11	31	4
Male	336	100	—	—	36	11	—	—
Female	354	100	—	—	41	12	—	—
New Brunswick								
Both sexes	551	100	—	—	37	7	41	7
Male	269	100	—	—	—	—	—	—
Female	282	100	—	—	—	—	27	9
Quebec								
Both sexes	5,231	100	174	3	489	9	501	10
Male	2,538	100	123	5	246	10	173	7
Female	2,694	100	51	2	244	9	328	12
Ontario								
Both sexes	7,469	100	335	4	883	12	630	8
Male	3,646	100	237	6	421	12	283	8
Female	3,823	100	99	3	463	12	347	9
Manitoba								
Both sexes	829	100	—	—	84	10	60	7
Male	404	100	—	—	42	10	25	6
Female	425	100	—	—	42	10	34	8
Saskatchewan								
Both sexes	749	100	—	—	73	10	33	4
Male	372	100	—	—	36	10	—	—
Female	377	100	—	—	37	10	30	8
Alberta								
Both sexes	1,823	100	45	2	180	10	74	4
Male	909	100	—	—	102	11	—	—
Female	914	100	—	—	77	8	59	6
British Columbia								
Both sexes	2,381	100	101	4	231	10	94	4
Male	1,170	100	73	6	113	10	27	2
Female	1,211	100	28	2	118	10	66	5

TABLE 1

Population 15 years of age and over by educational attainment, province and sex,
Canada, 1989 — concluded

Province and sex	Educational attainment							
	Trade or technical diploma ⁴		High school diploma		Less than high school		Other ⁵	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Canada								
Both sexes	2,456	12	5,676	28	7,588	37	214	1
Male	1,357	14	2,580	26	3,745	38	125	1
Female	1,099	11	3,096	30	3,843	37	89	1
Newfoundland								
Both sexes	82	19	81	19	192	45	—	—
Male	49	23	42	20	79	38	—	—
Female	33	15	40	18	113	52	—	—
Prince Edward Island								
Both sexes	—	—	—	—	47	48	—	—
Male	—	—	—	—	—	—	—	—
Female	—	—	—	—	—	—	—	—
Nova Scotia								
Both sexes	111	16	133	19	299	43	—	—
Male	62	18	71	21	138	41	—	—
Female	49	14	62	18	161	46	—	—
New Brunswick								
Both sexes	67	12	149	27	239	43	—	—
Male	30	11	71	27	127	47	—	—
Female	37	13	77	27	112	40	—	—
Quebec								
Both sexes	457	9	1,331	25	2,261	43	—	—
Male	278	11	629	25	1,076	42	—	—
Female	179	7	702	26	1,185	44	—	—
Ontario								
Both sexes	778	10	2,210	30	2,545	34	86	1
Male	444	12	932	26	1,277	35	52	1
Female	335	9	1,278	33	1,268	33	34	1
Manitoba								
Both sexes	93	11	218	26	339	41	—	—
Male	44	11	98	24	175	43	—	—
Female	49	12	121	28	163	38	—	—
Saskatchewan								
Both sexes	107	14	200	27	318	42	—	—
Male	45	12	111	30	163	44	—	—
Female	62	16	89	24	155	41	—	—
Alberta								
Both sexes	364	20	547	30	594	33	—	—
Male	209	23	258	28	295	32	—	—
Female	155	17	289	32	299	33	—	—
British Columbia								
Both sexes	380	16	784	33	753	32	35	1
Male	187	16	355	30	391	33	—	—
Female	193	16	429	35	362	30	—	—

¹ Includes masters or earned doctorate.

² Includes bachelor or undergraduate degree, or teacher's college.

³ Includes diploma or certificate from community college, CEGEP or nursing school.

⁴ Includes diploma or certificate from trade, technical or vocational school, or business college.

⁵ "Other" includes "No schooling".

"Not stated" category of educational attainment has been omitted from table but numbers are included in calculation of totals and percentages.

General Social Survey, 1989

TABLE 2

Population 15 years of age and over by educational attainment, age group and sex,
Canada, 1989

Age group and sex	Total population		Educational attainment					
	No.	%	Graduate degree ¹		Undergraduate degree ²		Community college diploma ³	
			No.	%	No.	%	No.	%
(Numbers in thousands)								
All age groups								
Both sexes	20,248	100	736	4	2,096	10	1,477	7
Male	9,903	100	509	5	1,034	10	553	6
Female	10,345	100	227	2	1,062	10	925	9
15-19								
Both sexes	1,860	100	—	—	—	—	—	—
Male	951	100	—	—	—	—	—	—
Female	909	100	—	—	—	—	—	—
20-24								
Both sexes	2,053	100	—	—	161	8	199	10
Male	1,038	100	—	—	79	8	73	7
Female	1,015	100	—	—	83	8	126	12
25-34								
Both sexes	4,667	100	184	4	645	14	564	12
Male	2,317	100	129	6	351	15	230	10
Female	2,350	100	55	2	294	12	334	14
35-44								
Both sexes	3,934	100	246	6	653	17	399	10
Male	1,962	100	154	8	331	17	136	7
Female	1,972	100	92	5	322	16	263	13
45-54								
Both sexes	2,695	100	153	6	282	10	137	5
Male	1,342	100	118	9	119	9	55	4
Female	1,353	100	35	3	163	12	82	6
55-64								
Both sexes	2,323	100	87	4	155	7	103	4
Male	1,136	100	69	6	69	6	38	3
Female	1,187	100	—	—	87	7	64	5
65 +								
Both sexes	2,716	100	57	2	199	7	59	2
Male	1,157	100	35	3	85	7	—	—
Female	1,559	100	—	—	114	7	44	3

TABLE 2

Population 15 years of age and over by educational attainment, age group and sex,
Canada, 1989 — concluded

Age group and sex	Educational attainment							
	Trade or technical diploma ⁴		High school diploma		Less than high school		Other ⁵	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
All age groups								
Both sexes	2,456	12	5,676	28	7,588	37	214	1
Male	1,357	14	2,580	26	3,745	38	125	1
Female	1,099	11	3,096	30	3,843	37	89	1
15-19								
Both sexes	—	—	486	26	1,346	72	—	—
Male	—	—	234	25	710	75	—	—
Female	—	—	253	28	637	70	—	—
20-24								
Both sexes	250	12	1,001	49	420	20	—	—
Male	126	12	512	49	233	22	—	—
Female	123	12	489	48	187	18	—	—
25-34								
Both sexes	661	14	1,668	36	913	20	31	1
Male	379	16	719	31	496	21	—	—
Female	282	12	949	40	417	18	—	—
35-44								
Both sexes	614	16	1,070	27	921	23	30	1
Male	355	18	487	25	481	25	—	—
Female	260	13	583	30	440	22	—	—
45-54								
Both sexes	371	14	556	21	1,182	44	—	—
Male	193	14	257	19	593	44	—	—
Female	177	13	299	22	589	44	—	—
55-64								
Both sexes	322	14	434	19	1,171	50	51	2
Male	176	15	202	18	541	48	41	4
Female	146	12	232	20	631	53	—	—
65 +								
Both sexes	231	8	460	17	1,633	60	72	3
Male	125	11	169	15	691	60	37	3
Female	105	7	291	19	942	60	35	2

General Social Survey, 1989

¹ Includes masters or earned doctorate.

² Includes bachelor or undergraduate degree, or teacher's college.

³ Includes diploma or certificate from community college, CEGEP or nursing school.

⁴ Includes diploma or certificate from trade, technical or vocational school, or business college.

⁵ "Other" includes "No schooling".

"Not stated" category of educational attainment has been omitted from table but numbers are included in calculation of totals and percentages.

TABLE 3

Population 15 years of age and over by main activity 12 months before starting studies,¹ year started and sex, Canada, 1989

Year and sex	Total population				Main activity							
	Employed		Students under 15 years of age		Students 15 years of age and older		Other		Not stated		Not applicable	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Total												
Both sexes	20,248	100	3,179	16	9,669	48	6,683	33	599	3	47	—
Male	9,903	100	1,853	19	4,563	46	3,217	32	212	2	—	43
Female	10,345	100	1,325	13	5,106	49	3,466	34	387	4	33	27
1949 or before												
Both sexes	5,107	100	190	4	3,970	78	873	17	73	1	—	—
Male	2,326	100	118	5	1,818	78	353	15	37	2	—	—
Female	2,781	100	72	3	2,152	77	520	19	36	1	—	—
1950-1964												
Both sexes	3,263	100	370	11	1,724	53	1,115	34	50	2	—	—
Male	1,634	100	238	15	822	50	548	34	27	2	—	—
Female	1,628	100	132	8	902	55	567	35	—	—	—	—
1965-1979												
Both sexes	5,995	100	1,061	18	2,228	37	2,536	42	171	3	—	—
Male	3,048	100	689	23	1,069	35	1,234	40	56	2	—	—
Female	2,948	100	372	13	1,158	39	1,303	44	115	4	—	—
1980-1989												
Both sexes	5,424	100	1,533	28	1,510	28	2,089	39	292	5	—	—
Male	2,709	100	799	29	775	29	1,047	39	89	3	—	—
Female	2,715	100	734	27	735	27	1,042	38	203	7	—	—
Not stated												
Both sexes	389	100	26	7	237	61	70	18	—	—	42	11
Male	143	100	—	—	79	55	36	25	—	—	—	—
Female	246	100	—	—	158	64	33	14	—	—	28	11
Not applicable²												
Both sexes	70	100	—	—	—	—	—	—	—	—	70	100
Male	43	100	—	—	—	—	—	—	—	—	43	100
Female	27	100	—	—	—	—	—	—	—	—	27	100

¹ For highest degree, diploma or certificate completed.

² Respondent had "No schooling".

General Social Survey, 1989

TABLE 4

Population 15 years of age and over who had a postsecondary¹ diploma or degree by main activity 12 months before starting studies,² year started and sex, Canada, 1989

Year and sex	Total population						Main activity					
			Employed		Students under 15 years of age		Students 15 years of age and older		Other		Not stated/not applicable	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Total												
Both sexes	6,765	100	2,184	32	377	6	3,790	56	388	6	26	—
Male	3,452	100	1,318	38	221	6	1,770	51	140	4	—	—
Female	3,313	100	866	26	156	5	2,021	61	248	7	—	—
1949 or before												
Both sexes	813	100	137	17	133	16	489	60	55	7	—	—
Male	379	100	79	21	67	18	201	53	31	8	—	—
Female	434	100	57	13	66	15	287	66	—	—	—	—
1950-1964												
Both sexes	1,096	100	280	26	86	8	684	62	42	4	—	—
Male	565	100	177	31	45	8	321	57	—	—	—	—
Female	531	100	103	19	41	8	363	68	—	—	—	—
1965-1979												
Both sexes	2,831	100	866	31	119	4	1,718	61	128	5	—	—
Male	1,541	100	580	38	82	5	836	54	43	3	—	—
Female	1,290	100	285	22	37	3	882	68	85	7	—	—
1980-1989												
Both sexes	1,950	100	884	45	31	2	874	45	160	8	—	—
Male	936	100	472	50	—	—	398	42	44	5	—	—
Female	1,014	100	412	41	—	—	476	47	117	11	—	—
Not stated												
Both sexes	76	100	—	—	—	—	—	—	—	—	—	—
Male	31	100	—	—	—	—	—	—	—	—	—	—
Female	44	100	—	—	—	—	—	—	—	—	—	—

General Social Survey, 1989

¹ Includes a masters or earned doctorate, bachelor or undergraduate degree, or teacher's college, a diploma or certificate from community college, CEGEP or nursing school, or a diploma or certificate from trade, technical or vocational school, or business college.

² For highest degree, diploma or certificate completed.

TABLE 5

Population 15 years of age and over who were enrolled in a postsecondary institution by educational program, sex and age group, Canada, 1989

Sex and age group	Total enrolled population				Educational program							
	Graduate degree ¹		Undergraduate degree ²		Community college diploma ³		Trade or technical diploma ⁴		Other			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Both sexes												
Total	1,935	100	176	9	791	41	484	25	374	19	111	6
15-24	904	100	40	4	403	45	266	29	174	19	—	—
25-34	624	100	80	13	223	36	146	23	115	18	61	10
35-44	298	100	35	12	111	37	62	21	68	23	—	—
45+	109	100	—	—	54	50	—	—	—	—	—	—
Male												
Total	920	100	84	9	346	38	232	25	204	22	55	6
15-24	462	100	—	—	194	42	141	30	96	21	—	—
25-34	333	100	49	15	131	39	60	18	66	20	28	8
35-44	97	100	—	—	—	—	30	31	35	36	—	—
45+	27	100	—	—	—	—	—	—	—	—	—	—
Female												
Total	1,016	100	92	9	446	44	252	25	170	17	56	6
15-24	442	100	—	—	209	47	126	28	78	18	—	—
25-34	291	100	31	11	92	32	86	30	49	17	33	11
35-44	202	100	27	14	98	49	32	16	33	16	—	—
45+	81	100	—	—	46	57	—	—	—	—	—	—

General Social Survey, 1989

1 Includes masters or earned doctorate.

2 Includes bachelor or undergraduate degree, or teacher's college.

3 Includes diploma or certificate from community college, CEGEP or nursing school.

4 Includes diploma or certificate from trade, technical or vocational school, or business college.

TABLE 6

Population 15 years of age and over by plans for further education in the next five years, main activity and sex, Canada, 1989

Main activity and sex	Total population				Plans for further education							
					Yes				No		Don't know	
					Post-secondary		Other					
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Total												
Both sexes	20,248	100	3,475	17	1,471	7	12,744	63	2,533	13	—	—
Male	9,903	100	1,684	17	692	7	6,396	65	1,126	11	—	—
Female	10,345	100	1,791	17	779	8	6,348	61	1,407	14	—	—
Employed												
Both sexes	12,155	100	2,172	18	987	8	7,205	59	1,780	15	—	—
Male	6,726	100	1,075	16	509	8	4,269	63	872	13	—	—
Female	5,428	100	1,097	20	479	9	2,936	54	908	17	—	—
Looking for work												
Both sexes	1,112	100	385	35	152	14	380	34	195	18	—	—
Male	600	100	225	37	67	11	227	38	81	14	—	—
Female	512	100	160	31	85	17	153	30	114	22	—	—
Students												
Both sexes	1,178	100	650	55	138	12	266	23	124	11	—	—
Male	569	100	299	52	77	14	122	21	72	13	—	—
Female	609	100	351	58	61	10	144	24	53	9	—	—
Keeping house												
Both sexes	2,550	100	122	5	124	5	2,042	80	258	10	—	—
Male	35	100	—	—	—	—	31	91	—	—	—	—
Female	2,516	100	121	5	124	5	2,011	80	256	10	—	—
Retired												
Both sexes	2,305	100	—	—	—	—	2,230	97	51	2	—	—
Male	1,362	100	—	—	—	—	1,325	97	25	2	—	—
Female	942	100	—	—	—	—	905	96	26	3	—	—
Other												
Both sexes	321	100	46	14	—	—	235	73	32	10	—	—
Male	201	100	29	14	—	—	155	77	—	—	—	—
Female	120	100	—	—	—	—	81	67	—	—	—	—
Normally works												
Both sexes	585	100	93	16	47	8	358	61	88	15	—	—
Male	379	100	53	14	28	7	244	64	53	14	—	—
Female	206	100	40	19	—	—	114	55	34	17	—	—
Not stated												
Both sexes	42	100	—	—	—	—	28	66	—	—	—	—
Male	31	100	—	—	—	—	—	—	—	—	—	—
Female	—	—	—	—	—	—	—	—	—	—	—	—

General Social Survey, 1989

CHAPTER 3

DEVELOPING HUMAN RESOURCES: THE LINKS BETWEEN EDUCATION AND EMPLOYMENT

This chapter investigates issues of human resource development and utilization in the employed work force. The central focus is on the relationship between workers' educational attainment and educational requirements of their jobs.

3.1 HIGHLIGHTS

- 18% of individuals employed at the time of the 1989 General Social Survey had a university degree, while 57% had a high school diploma or less as their highest level of education.
- 1.7 million, or 14% of those employed, were enrolled in an educational program leading to a degree, diploma or certificate.
- About half of the employed who were enrolled in an educational program chose their field of study either to improve their present career or to change careers, while 20% made the choice because of an interest in the subject.
- After graduating from their present program of study, 32% of the employed were planning further education.
- In 1989, 3.2 million, or 26% of the employed, planned to begin an educational program leading to a degree, diploma or certificate in the next five years.
- Based on workers' reports of qualifications typically required in their occupation, few jobs required less than a high school diploma, 20% required a postsecondary diploma and 18% required a university degree.
- Substantial numbers of workers were in jobs requiring less than their level of education. For example, 21% of individuals with postsecondary diplomas were in jobs requiring a high school diploma.

- 36% of the employed were in jobs closely related to their education, while 43% reported no relationship in this regard.
- 23% of the employed felt overqualified for their jobs.
- 89% of those employed were satisfied with their jobs. However, job satisfaction was considerably lower among workers who felt overqualified for their job.

3.2 INTRODUCTION

What is the connection between an individual's education and job requirements? To what extent do workers actually use their education on the job? Who among the employed plan to upgrade their education or acquire credentials in a different field? How is the utilization of education on the job related to a person's overall work experience, in particular their job satisfaction? These questions probe the extent to which Canada's human resources are being used to their potential in the labour market. In order to address these questions, this chapter will focus on three key issues: underemployment, the quality of individuals' working lives and the development of untapped human resources.

3.3 METHODS

The main focus in this chapter is on those individuals who, at the time of the 1989 GSS, reported that their main activity was working at a job or business. The term "employed" is used as a convenient way of referring to this group. However, self-employed individuals were also included among those whose main activity was working at

a job or business. Respondents were asked if they were "an employee working for someone else or self-employed". Those designating themselves as self-employed were then asked if they had any employees. Using this finer breakdown, 85% were found to be employees, 7% were self-employed with no employees, 7% were employers in their own right and 1% did not identify their labour market situation using one of these three categories.¹⁻²

Chapter 2 documents that adult Canadians were increasingly returning for more education, while at the same time, remained in the employed labour force. Similarly, almost four in ten of the 15-24-year-olds whose main activity at the time of the survey was working at a job or business stated later in the questionnaire that they were currently enrolled in an educational program and had taken courses in the past year.³

In other words, the 1989 GSS question on main activity during the week prior to the survey did not capture discrete statuses, especially when it came to education and work. However, any comparisons in this report between the employed and students were based on mutually exclusive categories, as defined by the GSS question on main activity. That is, individuals who reported "student" as their main activity were excluded from the employed category.

The standard Statistics Canada question, "What kind of work do you do?", was how the 1989 GSS determined a respondent's occupation. Information from this question was used to assign an occupational code⁴ which is used throughout this report as the basis of a 13-category occupational classification:

- managerial and administrative (1111-1179);
- science and engineering (2111-2189);
- social sciences (2311-2399, 2511-2519);
- teaching (2711-2799);
- medicine and health (3111-3169);
- artistic and literary (3311-3379);
- clerical (4110-4199);
- sales (5130-5199);
- service (6111-6199);
- primary (7113-7719);
- manufacturing and processing (8110-8599);
- construction and transportation (8710-9199); and
- other occupations (9310-9919).

On occasion, data presentation was simplified by combining occupations into three broad categories: 1) managerial and professional (managerial and administrative, science and engineering, social sciences, teaching, medicine and health, artistic and literary);

2) clerical, sales and service; and 3) blue-collar (primary, manufacturing and processing, and construction and transportation).

Individuals enrolled at the time of the survey in an educational program leading toward a university degree or postsecondary diploma or certificate were asked the main reason they chose their particular field of study. Possible responses were: prepare for a first career; change careers; improve present career; improve earnings; because of an interest in the subject; and for some other reason.

A prominent theme in this chapter is the fit between a person's education and the demands of their job. A sequence of three questions in the 1989 GSS investigated this relationship. First, employed respondents were asked "How closely is your job related to your education: closely related; somewhat related; or not related at all?" Second, employed respondents were asked "What level of education is normally required for people who do your type of work?" Response categories were the same as those used to determine an individual's highest level of educational attainment (described in Chapter 2). Third, employed respondents were asked to answer yes or no to this question: "Considering your experience, education and training, do you feel that you are overqualified for your job?" This measures subjective underemployment.⁵⁻⁶

Finally, this chapter briefly examines how the fit between an individual's education and their job requirements affected job satisfaction. Job satisfaction was measured on the following scale: very satisfied; somewhat satisfied; somewhat dissatisfied; very dissatisfied; and no opinion. Very few respondents (1% of the employed) had no opinion on this matter.

3.4 RESULTS

3.4.1 Educational attainment among the employed

Table 7 sketches out the highest level of education attained by individuals whose main activity was working at a job or business. In terms of university credentials, 5% had earned a graduate degree and another 13% had undergraduate degrees. In other words, 18% of the employed had a university degree. This was considerably higher than the figure of 14% for the population aged 15 and over. In addition, almost one in four employed individuals had earned a postsecondary diploma.

However, for over half (57%) of the employed, their highest level of education was a high school diploma or less. That 27% had not achieved high school graduation raises serious concerns about their skill levels and ability

to contribute at their full potential. It is estimated that half of all occupations now entail the creation and use of data and knowledge, and that information-based jobs will increase as the service sector develops.⁷ Individuals with no formal qualifications, most already in marginal labour market positions, will face even greater disadvantages in future.

Table 7 shows the highest levels of education attained by the currently employed within each occupational category. Three occupations stand out as having had high proportions of individuals with masters or doctorate degrees: social sciences (32%), teaching (21%), and medicine and health (17%). Teaching was the occupation with the largest proportion of individuals having had an undergraduate degree as their highest level of education (55%), followed by artistic and literary occupations (35%) and social sciences (31%). Science and engineering occupations, as well as managerial and administrative occupations, had 24% and 22%, respectively, of individuals with undergraduate degrees.

Regarding postsecondary diplomas and certificates, health and medicine occupations had the highest proportion (40%) of individuals reporting a community college, CEGEP or nursing diploma or certificate as their highest level of education. Individuals with a diploma or certificate from a trade, technical or vocational school or business college were more likely to be employed in manufacturing and processing or in construction and transportation (both at 21%).

Clerical occupations had the largest proportion (45%) reporting a high school diploma as their highest level of education attained. Finally, 52% of workers in primary jobs, half of those employed in service occupations, and 44% of individuals in manufacturing and processing reported having less than a high school diploma.

Text Table G describes educational attainment of the employed by age group. Consistent with the findings for the adult population aged 15 and over in Chapter 2, workers in the 25-44 age group — the baby boomers — had

TEXT TABLE G
Employed population 15 years of age and over by educational attainment and age group,
Canada, 1989

Age group	Total employed population		Educational attainment					
			Graduate degree ¹		Undergraduate degree ²		Community college diploma ³	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
All age groups	12,155	100	653	5	1,595	13	1,188	10
15-19	788	100	—	—	—	—	—	—
20-24	1,353	100	—	—	113	8	171	13
25-44	6,682	100	399	6	1,152	17	821	12
45-54	2,013	100	148	7	234	12	121	6
55+	1,318	100	102	8	97	7	68	5

the highest overall levels of educational attainment. It should also be noted that baby boomers comprised 55% of the employed. Almost one in four (23%) of this age cohort had a university degree, compared with just over 17% of those individuals aged 45 and over. A larger proportion of employed individuals under the age of 25 were still in the process of acquiring postsecondary credentials, hence their lower overall educational attainment.

3.4.2 Enrollment among the employed

Just over 1.7 million individuals, or 14% of the employed, were studying for a university degree, postsecondary diploma or certificate, or high school diploma (Table 8). Proportionally more females (16%) than males (12%) were pursuing further education. When broken down by occupation, one in four service workers and about one in five teachers and sales workers were found to be enrolled. In service and sales occupations, males had slightly higher enrollment rates than females, while the reverse was true in teaching.

Figure F documents differences across age groups. The first pertinent observation was that more than two-thirds of teenagers, whose main activity was working at a job or business, were enrolled in an educational program leading toward a degree, diploma or certificate. One in four of the employed aged 20-24 were enrolled, compared with 11% of baby boomers and 3% of individuals aged 45 and over.

As might be expected, the type of program varied by age group. Eighteen enrolled 15-19-year-olds were studying for a high school diploma, while 15% were seeking a diploma or certificate from a community college, trade, technical or vocational school or business college (Text Table H). In the 20-24 age group, just over half of enrollments were in university degree programs, with another 37% in postsecondary diploma programs. In comparison, relatively more employed baby boomers were enrolled in postsecondary diploma programs and in "other programs". There were too few workers aged 45 and over to allow an accurate analysis of their enrollment patterns.

TEXT TABLE G
**Employed population 15 years of age and over by educational attainment and age group,
 Canada, 1989 — concluded**

Age group	Educational attainment							
	Trade or technical diploma ⁴		High school diploma		Less than high school		Other ⁵	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
All age groups	1,686	14	3,672	30	3,260	27	101	1
15-19	—	—	249	32	526	67	—	—
20-24	186	14	616	46	252	19	—	—
25-44	1,027	15	2,071	31	1,163	17	49	1
45-54	266	13	451	22	781	39	—	—
55 +	200	15	285	22	537	41	29	2

¹ Includes masters or earned doctorate.

² Includes bachelor or undergraduate degree, or teacher's college.

³ Includes diploma or certificate from community college, CEGEP or nursing school.

⁴ Includes diploma or certificate from trade, technical or vocational school, or business college.

⁵ "Other" includes "No schooling".

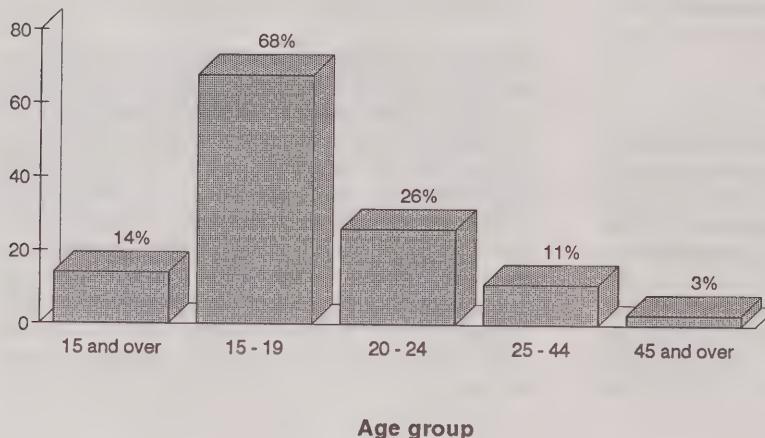
"Not stated" category of educational attainment has been omitted from table but numbers are included in calculation of totals and percentages.

General Social Survey, 1989

FIGURE F

Employed population 15 years of age and over who were enrolled in an educational program(1) by age group, Canada, 1989

% enrolled



General Social Survey, 1989

(1) Includes those employees who were working towards a degree, diploma or certificate.

TEXT TABLE H

Employed population 15 years of age and over who were enrolled by educational program and age group, Canada, 1989

Age group	Total employed population		Educational program									
			University degree ¹		Postsecondary diploma ²		High school diploma		Other		Not stated	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
All age groups	1,704	100	581	34	524	31	495	29	96	6	—	—
15-19	533	100	—	—	81	15	428	80	—	—	—	—
20-24	347	100	177	51	129	37	27	8	—	—	—	—
25-44	740	100	329	44	296	40	36	5	72	10	—	—
45 +	83	100	54	64	—	—	—	—	—	—	—	—

¹ Includes masters, earned doctorate, bachelor, undergraduate degree or teacher's college.

General Social Survey, 1989

² Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

There are two additional points worth making about enrollment patterns among the employed. First, 88% of those enrolled in an educational program in 1989 had taken courses during the 12 months prior to the survey (table not shown). This level of educational activity was slightly higher among females than males (90% versus 86%). Second, 53% of those enrolled, who took courses in their program during the 12 months prior to the survey, reported full-time student status. There was a significant gender difference in this regard, with 60% of males and 46% of females who had reported full-time student status.

This latter finding seems incongruous with the fact that the same individuals reported their main activity at the time of the 1989 GSS was working at a job or business. To resolve this issue, more information is needed about these educational programs, especially how full-time student status is defined. Furthermore, it would be useful to know the salience of employment to an individual's self-identity, even though she or he may be devoting a considerable time to education. Such details were not available in the 1989 GSS.

Finally, the types of educational programs being pursued by individuals in specific occupations were examined. The majority of workers in managerial and administration, teaching, and health and medicine occupations who were enrolled in an educational program were seeking university degrees. However, more than half of enrollments among workers in manufacturing and processing and construction and transportation jobs were in postsecondary diploma or certificate programs. In sales and service occupations, enrollments were concentrated in high school diploma programs (table not shown).

3.4.3 Main reason for field of study and postgraduation plans

Figure G examines the main reason for choice of program by comparing students and the employed (both defined in terms of main activity at the time of the 1989 GSS). As expected, the majority of students were preparing for their initial career, although 23% of the employed also cited this reason. A small proportion in either group were studying so they could change careers. However, the fact that 14% of the employed studying for a degree or diploma were intending to switch careers provides evidence of the sort of adaptability some labour market policy analysts are calling for in response to economic restructuring.⁸

In contrast, over one-third of the employed group chose their field of study in order to improve their existing career. Few based their decision mainly on a desire to improve their earnings. Despite the emphasis most of the employed

placed on job-related reasons, one in five still chose their specialization mainly because of an interest in the subject. Of course, this reason does not preclude these individuals from also wanting career benefits from their education.

Related to the reason for entering a particular program was an individual's plans after graduation. Thirty-two percent of the employed were planning further education and approximately 31% intended to enter a new job (table not shown). Females, compared to males, were somewhat more likely to report either of these plans. Over one-quarter of both sexes would continue working at the same job. Very few (10% of males and 7% of females) did not have specific plans.

3.4.4 Plans for further education or training

Considering that over 1.7 million employed individuals were actively pursuing a degree or diploma, it might also be expected that large numbers of those people will make plans to begin an educational program during the next five years. In fact, 3.2 million individuals, representing just over one-quarter of the employed, had such plans (Table 9).

Table 9 establishes that sales (35%) and service (34%) occupations had the highest proportions of workers with educational plans in the next five years, followed by clerical occupations (31%). Blue-collar workers were least likely to have further educational plans. Even so, almost one in five intended to upgrade their education. Individuals in managerial and administrative, medicine and health, and artistic and literary occupations were also below the labour force average in terms of educational plans. This was mainly due to the already high level of educational attainment among these workers.

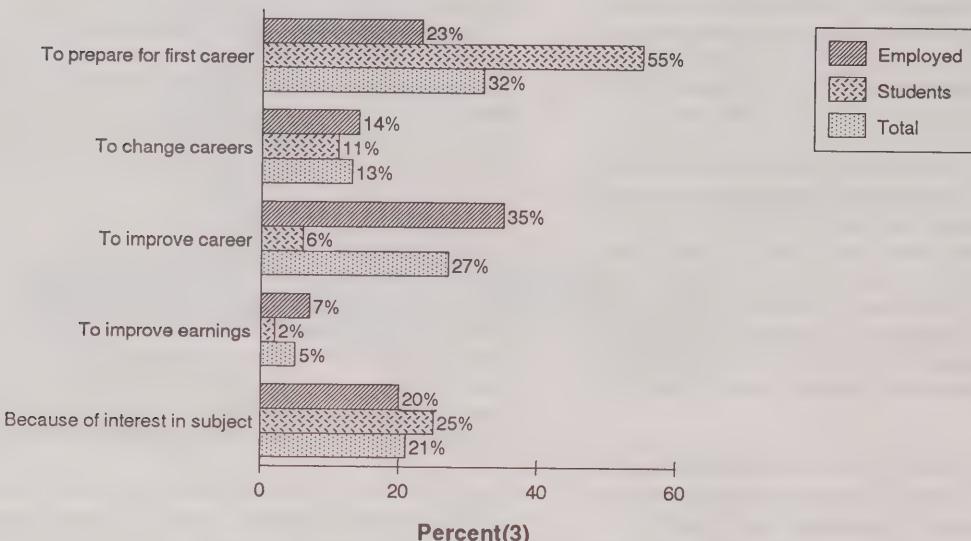
While almost identical numbers of males and females among the employed planned to start an educational program, proportionally more females (29%) than males (24%) reported such plans. Substantial gender differences existed within several occupations. For example, 37% of females compared with 22% of males in the social sciences planned to further their education. Differences, almost as large, could also be found in management and administration, teaching, and medicine and health occupations. In sales and service occupations, more males than females had these plans.

Above all, what deserves further investigation is why relatively high proportions of individuals employed in clerical, sales and service jobs intend to obtain further education or training.⁹ These jobs are often associated with undesirable working conditions, low pay and very limited career opportunities — so-called bad jobs.¹⁰⁻¹³

FIGURE G

Population 15 years of age and over who were employed and enrolled in an educational program(1) or were students(2) by main reason for field of study, Canada, 1989

Main reason



General Social Survey, 1989

(1) Includes those employees who were working towards a degree, diploma or certificate. Does not include those who were enrolled and working towards an elementary or high school diploma.

(2) Does not include those students who were enrolled and working towards an elementary or high school diploma.

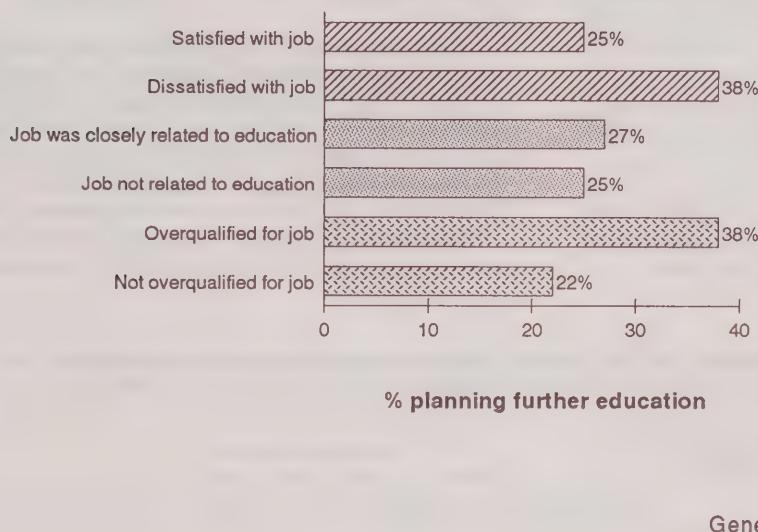
(3) "For some other reason" and "Not stated" are included in calculation of percentages, but not shown.

Assuming that this designation is largely accurate, what Canadians may be witnessing is a desire by one-third or more of individuals employed in clerical, sales and service occupations to improve their prospects either by switching employers, jobs or careers. Perhaps these workers view increasing their human capital through additional education as the means to this end. There is a possible demographic explanation for why this same phenomenon is not encountered in blue-collar occupations, many of which are also low-status and dead-end. Blue-collar workers tend to be male and older, with lower educational attainment than younger and typically female workers in clerical, sales or service jobs. Furthermore, the relatively high pay in a number of blue-collar jobs may also contribute to the lack of educational plans.

To what extent does job dissatisfaction, a mismatch between one's job and education, or being overqualified for one's job influence plans for further education? Do these conditions encourage workers to further develop their human capital as a route to something better? Figure H briefly examines these issues. Being satisfied or dissatisfied with one's job appeared to have a direct impact on educational plans, with dissatisfied employees more likely to have reported such plans. Similarly, feeling overqualified was a strong inducement to upgrade one's education as a way of getting a better job. However, the relationship between education and employment had little effect, that is, having a job that was related to one's education only slightly increased the chances of planning to pursue more education. Clearly, more thorough investigation of how

FIGURE H

Employed population 15 years of age and over who were planning further education in the next five years by selected job characteristics, Canada, 1989



General Social Survey, 1989

job content and working conditions influence educational plans is needed.

3.4.5 Educational requirements of jobs

What level of education is required in different jobs? This question is crucial to understanding the match between a worker's educational credentials and the requirements of her or his job. Table 10 reports workers' assessments of the level of education normally required for people in their type of job.

Overall, the vast majority knew what qualifications were required in their line of work. One in five of those employed claimed that no qualifications were required. A slightly larger proportion (24%) were in jobs requiring a high school diploma. Fewer than one in ten jobs required less than a high school diploma. But some of the jobs in which qualifications were not specified may, in effect, also fall into this category. According to the individuals performing them, one in five jobs required a postsecondary diploma, 18% required a university degree and only 4% stated that some postsecondary education was required. Employers apparently value a degree, a diploma or some other completed credential in the recruitment process.

In Table 10, occupations can be sorted into two categories: ones demanding postsecondary or university credentials and those requiring a high school diploma or less. Falling into the former category were social science and teaching jobs, the large majority of which required a university degree. Over 40% of science and engineering occupations and one-third of jobs in management and administration also required a university degree. The occupations in which a postsecondary diploma was most necessary were medicine and health (49%) and science and engineering (34%). Falling into the second category — high school diploma or less, or no qualifications required — were primary, construction and transportation, and sales and service jobs.

It is noteworthy that few clerical, sales or service jobs needed a university degree and only about 10% of sales and service jobs required a postsecondary diploma. These relatively low educational requirements amplify the earlier discussion of the underemployment problem in these white-collar occupations.

Together, clerical, sales and service occupations comprised 36% of the individuals working at a job or business. Moreover, these three occupations have played a central

role in service sector growth. This raises concerns about the level of skill requirements in the service economy.¹⁴

To pursue this issue, the relationship between the educational credentials of the employed and the level of education required to do their jobs needs to be examined. According to Text Table I, 71% of workers with university degrees were in jobs requiring this credential. Moving down the credential ladder, individuals were found to be performing jobs which formally require higher levels of education than they have obtained.

A number of factors are operating here. For example, the gradual raising of entry-level requirements by employers for some jobs makes older workers appear less

qualified in comparison with younger, recently recruited workers. This process is known as credentialism.¹⁵ Thus, about 8% of the employed with postsecondary diplomas and 7% of those with high school diplomas were employed in jobs which normally required a university degree.

A greater concern, however, is the substantial number of individuals with either postsecondary degrees or diplomas or high school diplomas who were working at jobs requiring less than their level of education. For instance, one in five employed individuals with postsecondary diplomas were in jobs specifically requiring a high school diploma. Twenty-eight percent of high school graduates were performing jobs requiring less than a high school diploma or no specific qualifications at all. It is safe to assume that

TEXT TABLE I

Employed population 15 years of age and over by level of education normally required for type of work performed, sex and educational attainment, Canada, 1989

Sex and educational attainment	Total employed population		Required educational level							
			University degree ¹		Postsecondary diploma ²		Some postsecondary		High school diploma	
	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)										
Both sexes										
Total	12,155	100	2,156	18	2,399	20	441	4	2,947	24
University degree ¹	2,248	100	1,603	71	192	9	64	3	179	8
Postsecondary diploma ²	2,874	100	235	8	1,417	49	87	3	598	21
High school diploma	3,672	100	247	7	547	15	216	6	1,410	38
Less than high school	3,260	100	64	2	230	7	72	2	734	23
Other ³	101	100	—	—	—	—	—	—	26	25
Not stated	—	—	—	—	—	—	—	—	—	—
Male										
Total	6,726	100	1,363	20	1,218	18	218	3	1,635	24
University degree ¹	1,332	100	983	74	88	7	36	3	103	8
Postsecondary diploma ²	1,529	100	167	11	716	47	44	3	329	22
High school diploma	1,819	100	154	8	238	13	91	5	693	38
Less than high school	1,982	100	52	3	168	8	47	2	491	25
Other ³	64	100	—	—	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—
Female										
Total	5,428	100	794	15	1,181	22	223	4	1,313	24
University degree ¹	916	100	620	68	104	11	29	3	76	8
Postsecondary diploma ²	1,345	100	68	5	702	52	43	3	269	20
High school diploma	1,853	100	93	5	309	17	125	7	717	39
Less than high school	1,278	100	—	—	62	5	26	2	243	19
Other ³	36	100	—	—	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—

jobs which required no qualifications were low-skilled, given that they accounted for 42% of the employed who had less than a high school diploma.

3.4.6 How closely related are jobs to workers' education?

Approaching the question of how effectively human capital is being utilized in the labour market from a different angle, responses to the question "How closely is your job related to your education?" were examined. Table 11 breaks down answers to this question by the educational attainment of currently employed individuals.

Individuals reporting that their job was closely related to their education tended to have either university degrees or

postsecondary diplomas or certificates. The largest cluster of the employed whose jobs were somewhat related to their education had high school diplomas. Those reporting that their job was not at all related to their education were most likely to have less than a high school diploma. Generally, the higher an employee's education level the greater their chances of actually using this education on the job.

In the work force, 36% of the employed had jobs which were closely related to their education (Table 11). For about one in five, their jobs were somewhat related to their education, while 43% reported no relationship in this regard. Females were somewhat more likely than males to be working in jobs closely related to their education.

TEXT TABLE I

Employed population 15 years of age and over by level of education normally required for type of work performed, sex and educational attainment, Canada, 1989 — concluded

Sex and educational attainment	Required educational level							
	Less than high school		No qualifications specified		Other		Don't know/not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
Total	1,079	9	2,500	21	244	2	387	3
University degree ¹	41	2	86	4	53	2	30	1
Postsecondary diploma ²	132	5	293	10	36	1	76	3
High school diploma	306	8	724	20	65	2	156	4
Less than high school	594	18	1,373	42	67	2	126	4
Other ³	—	—	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—
Male								
Total	669	10	1,330	20	129	2	164	2
University degree ¹	27	2	43	3	35	3	—	—
Postsecondary diploma ²	81	5	150	10	—	—	—	—
High school diploma	184	10	357	20	28	2	74	4
Less than high school	373	19	768	39	35	2	49	2
Other ³	—	—	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—
Female								
Total	410	8	1,170	22	115	2	223	4
University degree ¹	—	—	43	5	—	—	—	—
Postsecondary diploma ²	51	4	142	11	—	—	52	4
High school diploma	122	7	367	20	37	2	82	4
Less than high school	221	17	605	47	33	3	76	6
Other ³	—	—	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—

General Social Survey, 1989

¹ Includes masters, earned doctorate, bachelor, undergraduate degree or teacher's college.

² Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

³ "Other" includes "No schooling".

Because apprenticeships provide very specific job-related training, does this result in a closer fit between job requirements and education in the labour market? Among individuals with apprenticeship certification, 45% claimed that their job was closely related to their education, compared with 34% in the rest of the employed work force (table not shown). This pattern was reversed in the "not at all" response category. However, gender differences were quite pronounced. Males with apprenticeship training, more than females, had jobs that were closely tied to their education.

3.4.7 Overqualification

Feeling overqualified for a job is a form of underemployment. Essentially, when workers' knowledge and abilities are not being fully tapped, this signifies the inadequate use of the nation's human resources. Almost one in four (23%) of the employed felt that they were overqualified for their job (Table 12). This perception was somewhat more widespread among employed females than among their male counterparts.

Table 12 investigates overqualification by level of education. The proportion of those feeling overqualified

was remarkably constant across levels of education. Among males, those with a high school diploma were most likely to feel overqualified (26%). Among females, those with graduate degrees and high school diplomas reported the highest level of overqualification (30% and 28%, respectively).

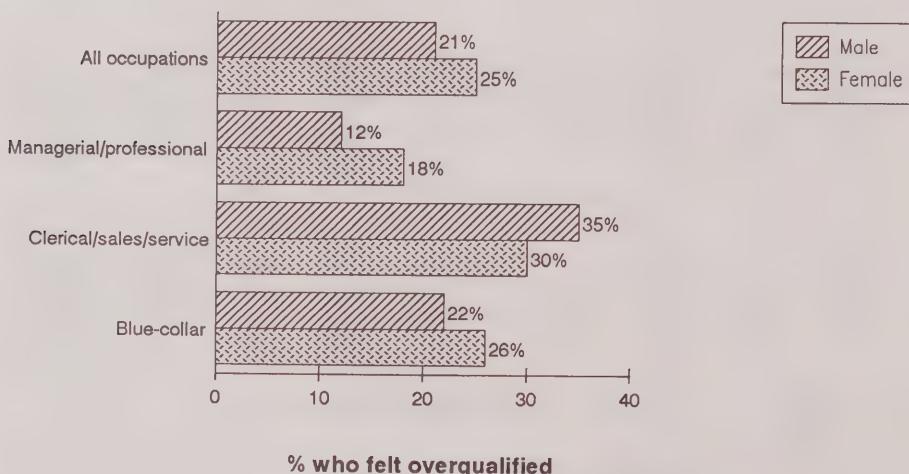
Figure I summarizes the extent of overqualification in three major occupational categories. Over one-third of males and 30% of females in clerical, sales and service jobs felt overqualified. Male managers and professionals (12%) were least likely to be overqualified, compared with about 18% among females. Gender differences in blue-collar occupations were less evident, with close to 26% of females and 22% of males feeling overqualified.

A more detailed occupational breakdown of perceived overqualification is given in Table 13. The percentage of the employed who felt overqualified was lowest in teaching. Conversely, 35% of workers in service jobs and 30% in clerical and sales jobs felt overqualified — more than in any other occupation. Again, this illuminates the earlier discussion of why these occupations had the greatest proportion of individuals planning further education. Ironically, many individuals possessing higher credentials

FIGURE I

Employed population 15 years of age and over who felt overqualified for their job by major occupational group and sex, Canada, 1989

Major occupational group



General Social Survey, 1989

than required for their particular job believed that they must obtain even more education to compete effectively for a better job.

Figure J explores the relationship between an individual's feeling of overqualification and the education required in their job. The most important finding is that perceived overqualification was highest in jobs requiring a high school diploma or less, or where no qualifications were specified by the employer. It was lowest in jobs requiring a postsecondary diploma or university degree. Only 12% of individuals in jobs which formally required a university degree reported feeling overqualified, as did 16% of employees in jobs which required a postsecondary diploma.

3.4.8 Job satisfaction and the link between work and education

How does the relationship between an individual's educational attainment and education typically required to perform their job affect that person's quality of working

life? One way of addressing this question is to use job satisfaction as a global measure of the quality of a person's work experiences.

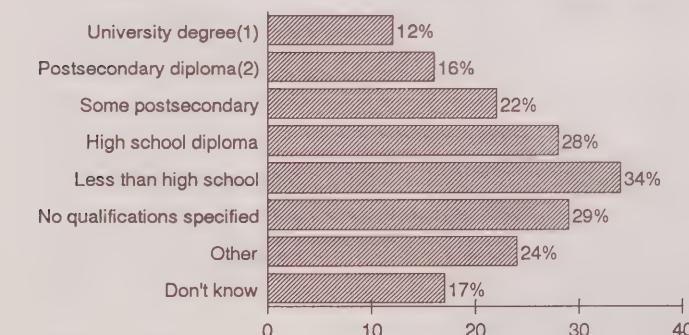
The level of job satisfaction was very high for males (89%) and females (88%) alike (table not shown). Fully 89% of the employed claimed to be satisfied with their jobs. Only 11% explicitly reported dissatisfaction and 1% had no opinion. A comparable national study, conducted in 1973, also found that 89% were satisfied with their jobs.¹⁶ This stability of job satisfaction over time certainly is remarkable. However, a thorough analysis of the complex determinants of variations in job satisfaction, and how these patterns may or may not change over time, falls beyond the scope of the 1989 GSS.¹⁷

More to the point, minor variations were found in job satisfaction based on how closely a respondent's job and education were related. Among those in jobs unrelated to their education, 85% were satisfied with their work (table not shown). This compares with 94% satisfaction among

FIGURE J

Employed population 15 years of age and over who felt overqualified for their job by education required for job, Canada, 1989

Education required for job



General Social Survey, 1989

(1) Includes masters or earned doctorate, bachelor or undergraduate degree, or teacher's college.

(2) Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

those individuals whose work was closely related to their education. Similarly, workers in jobs which required a higher level of education reported slightly higher job satisfaction. Hence, job satisfaction ranged from 81% for people in jobs requiring less than a high school diploma to 93% for workers in jobs requiring a university degree. Females in jobs requiring the highest (university) and the lowest (less than high school) education levels had somewhat lower job satisfaction than male co-workers.

Directly and indirectly, many other factors interacted with these indicators of the educational requirements of jobs. But there can be little doubt that feeling overqualified in one's job significantly reduced job satisfaction (Figure K). While 93% of workers who did not feel overqualified reported satisfaction with their job, the level of satisfaction declined to 75% among workers who felt overqualified.

3.5 DISCUSSION

This chapter has used the 1989 GSS to explore issues of human capital development and utilization in the employed work force. The central theme has been the fit between levels of education possessed by workers and the

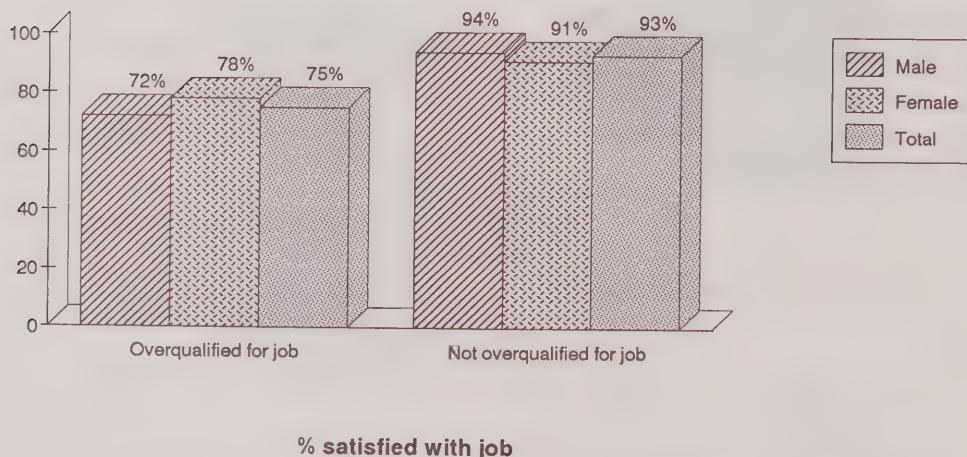
educational requirements of their jobs. Rapid changes in Canada's industrial structure — particularly the development of a service economy and greater reliance on new information processing technologies — make human resources an urgent concern for the 1990s.

High levels of educational attainment were found among the employed population. Eighteen percent had a university degree and close to one-quarter had a postsecondary diploma. However, large numbers of the employed, comprising over one-quarter of those working at a job or business, had less than a high school diploma. These disparities in educational credentials raise questions about growing polarization in job demands and job rewards.

In early 1989, over 1.7 million Canadians working at a job or business were currently studying for a degree, diploma or certificate. This recognition of the value of higher education was especially strong among baby boomers, particularly females. As a result of high educational participation in the 25-44 age cohort, combining employment and education was becoming a common pattern. Employer personnel policies could facilitate the acquisition of further education through, among other measures, flexible work schedules, supported educational

FIGURE K

Employed population 15 years of age and over who were satisfied with their job by overqualification for job and by sex, Canada, 1989



General Social Survey, 1989

leaves and child care assistance for workers with young children.¹⁸

Educational upgrading tended to be concentrated in lower-level white-collar occupations, mostly in clerical, sales and service jobs. Workers in these jobs not only had the highest levels of enrollment, they also were most likely to be planning further education in the next five years. This trend merits closer analysis. Where will highly educated clerical, sales and service workers — the majority of whom are female — find jobs which make better use of their credentials? This is an important question in light of mounting evidence that many of these service sector occupations tend to require low skills, provide few challenges, and offer meagre economic rewards.

More generally, there are a number of ways in which job demands do not make use of workers' education. The problem of over qualification, or underemployment, was especially evident in clerical, sales and service jobs. Workers whose education is underutilized felt considerably less satisfied with their jobs. Whether obtaining more education will help these individuals to find more challenging, skilled and satisfying work poses major human resource dilemmas.

NOTES

1. Krahn, Harvey. *Quality of Work in the Service Sector: An Analysis of the 1989 General Social Survey*, (Ottawa: Statistics Canada, 1992), p. 54. Krahn uses a slightly different population base than this report, including in the employed category those individuals between the ages of 15 and 64 who reported "working at a job or business" in the reference week even if their main activity was something other than "working at a job or business" (i.e. retired, student) or who had a job to which they were going to return. This report only includes those individuals reporting that their main activity during the reference week was "working at a job or business".
2. Cohen, Gary L. "Self-employment in Canada.", *Canadian Social Trends*, (Ottawa: Statistics Canada, Spring 1989), p. 17-19.
3. Krahn, op cit, p. 30.
4. Statistics Canada. *Standard Occupational Classification*. (Ottawa: Statistics Canada, 1981).
5. Burris, Beverly. "The human effects of underemployment.", *Social Problems*, 31 (1983), p. 96-110.
6. Clogg, Clifford C., Teresa A. Sullivan and Fan E. Mutchler. "Measuring underemployment and inequality in the work force." *Social Indicators Research*, 18 (1986), p. 375-393.
7. Economic Council of Canada. *Good Jobs, Bad Jobs: Employment in the Service Economy*. (Ottawa: Supply and Services Canada, 1990).
8. Canada Employment and Immigration. *Success in the Works: A Profile of Canada's Emerging Work Force*. (Ottawa: Employment and Immigration Canada, 1989), p. 23.
9. Krahn, Harvey and Graham S. Lowe. "Young workers in the service economy." (Ottawa: Economic Council of Canada, Working Paper No. 14, 1990). This was not a result of youth who were students working part-time in these occupations because individuals reporting their main activity as a student were excluded from this analysis. However, the concentration of young people in service jobs, in particular, may be a factor.
10. Economic Council of Canada, op cit.
11. Krahn, op cit.
12. Radwanski, George. *Ontario Study of the Service Sector*. (Toronto: Ontario Ministry of Treasury and Economics, 1986).
13. Krahn, Harvey and Graham S. Lowe, op cit, p. 22-40.
14. Myles, John and Gail Fawcett. "Job skills and the service economy." (Ottawa: Economic Council of Canada, Working Paper No. 4, 1990).
15. Collins, Randall. *The Credential Society*. (New York: Academic Press, 1979).
16. Burstein, M., N. Tienharra, P. Hewson and B. Warrander. *Canadian Work Values: Findings of a Work Ethic Survey and a Job Satisfaction Survey*. (Ottawa: Information Canada, 1975).
17. Krahn, Harvey and Graham S. Lowe. *Work, Industry and Canadian Society*. (Don Mills: Nelson Canada, 1988), p. 159-168.
18. Canadian Chamber of Commerce. *Focus 2000: Report of the Task Force on Harnessing Change*. (Ottawa: 1988), p. vii. Canadian employers are increasingly recognizing the need to "...devote more resources to lifetime learning, skills upgrading, and retraining."

TABLE 7

Employed population 15 years of age and over by educational attainment, sex and occupation,
Canada, 1989

Sex and occupation	Total employed population		Educational attainment					
			Graduate degree ¹		Undergraduate degree ²		Community college diploma ³	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All occupations	12,155	100	653	5	1,595	13	1,188	10
Managerial/administration	1,919	100	151	8	424	22	173	9
Science/engineering	602	100	67	11	147	24	137	23
Social science	338	100	107	32	104	31	47	14
Teaching	681	100	140	21	371	55	40	6
Medicine/health	638	100	108	17	76	12	255	40
Artistic/literary	264	100	—	—	92	35	—	—
Clerical	1,975	100	—	—	136	7	186	9
Sales	1,032	100	—	—	97	9	89	9
Service	1,394	100	—	—	46	3	67	5
Primary	419	100	—	—	—	—	—	—
Manufacturing/processing	1,409	100	—	—	46	3	65	5
Construction/transportation	953	100	—	—	—	—	40	4
Other occupations	436	100	—	—	—	—	34	8
Not stated	94	100	—	—	—	—	—	—
Male								
All occupations	6,726	100	476	7	856	13	506	8
Managerial/administration	1,243	100	113	9	307	25	88	7
Science/engineering	478	100	51	11	124	26	97	20
Social science	179	100	84	47	55	30	—	—
Teaching	269	100	95	35	124	46	—	—
Medicine/health	153	100	76	50	—	—	—	—
Artistic/literary	128	100	—	—	29	23	—	—
Clerical	419	100	—	—	45	11	40	10
Sales	522	100	—	—	56	11	27	5
Service	585	100	—	—	33	6	34	6
Primary	352	100	—	—	—	—	—	—
Manufacturing/processing	1,121	100	—	—	—	—	57	5
Construction/transportation	891	100	—	—	—	—	37	4
Other occupations	327	100	—	—	—	—	32	10
Not stated	60	100	—	—	—	—	—	—
Female								
All occupations	5,428	100	177	3	739	14	682	13
Managerial/administration	675	100	38	6	117	17	85	13
Science/engineering	125	100	—	—	—	—	40	32
Social science	159	100	—	—	50	31	38	24
Teaching	412	100	45	11	247	60	—	—
Medicine/health	486	100	32	7	57	12	231	48
Artistic/literary	135	100	—	—	62	46	—	—
Clerical	1,556	100	—	—	91	6	147	9
Sales	510	100	—	—	41	8	62	12
Service	809	100	—	—	—	—	33	4
Primary	67	100	—	—	—	—	—	—
Manufacturing/processing	287	100	—	—	—	—	—	—
Construction/transportation	63	100	—	—	—	—	—	—
Other occupations	109	100	—	—	—	—	—	—
Not stated	35	100	—	—	—	—	—	—

TABLE 7

Employed population 15 years of age and over by educational attainment, sex and occupation,
Canada, 1989 — concluded

Sex and occupation	Educational attainment							
	Trade or technical diploma ⁴		High school diploma		Less than high school		Other ⁵	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All occupations	1,686	14	3,672	30	3,260	27	101	1
Managerial/administration	274	14	594	31	278	14	—	—
Science/engineering	87	14	136	23	—	—	—	—
Social science	29	9	27	8	—	—	—	—
Teaching	26	4	70	10	—	—	—	—
Medicine/health	35	5	70	11	86	14	—	—
Artistic/literary	32	12	77	29	28	11	—	—
Clerical	308	16	889	45	434	22	—	—
Sales	152	15	375	36	296	29	—	—
Service	112	8	467	33	692	50	—	—
Primary	51	12	110	26	216	52	—	—
Manufacturing/processing	302	21	366	26	625	44	—	—
Construction/transportation	201	21	294	31	379	40	—	—
Other occupations	61	14	156	36	155	35	—	—
Not stated	—	—	42	45	—	—	—	—
Male								
All occupations	1,023	15	1,819	27	1,982	29	64	1
Managerial/administration	159	13	352	28	202	16	—	—
Science/engineering	81	17	101	21	—	—	—	—
Social science	—	—	—	—	—	—	—	—
Teaching	—	—	—	—	—	—	—	—
Medicine/health	—	—	—	—	—	—	—	—
Artistic/literary	—	—	34	26	—	—	—	—
Clerical	29	7	144	34	156	37	—	—
Sales	84	16	173	33	160	31	—	—
Service	53	9	201	34	258	44	—	—
Primary	45	13	69	20	204	58	—	—
Manufacturing/processing	274	24	301	27	461	41	—	—
Construction/transportation	193	22	262	29	360	40	—	—
Other occupations	54	16	123	38	112	34	—	—
Not stated	—	—	—	—	—	—	—	—
Female								
All occupations	663	12	1,853	34	1,278	24	36	1
Managerial/administration	114	17	242	36	76	11	—	—
Science/engineering	—	—	35	28	—	—	—	—
Social science	—	—	—	—	—	—	—	—
Teaching	—	—	62	15	—	—	—	—
Medicine/health	31	6	57	12	70	14	—	—
Artistic/literary	—	—	43	32	—	—	—	—
Clerical	278	18	745	48	278	18	—	—
Sales	67	13	201	40	136	27	—	—
Service	58	7	266	33	434	54	—	—
Primary	—	—	41	61	—	—	—	—
Manufacturing/processing	29	10	65	22	164	57	—	—
Construction/transportation	—	—	33	52	—	—	—	—
Other occupations	—	—	33	30	43	40	—	—
Not stated	—	—	—	—	—	—	—	—

1 Includes masters or earned doctorate.

2 Includes bachelor or undergraduate degree, or teacher's college.

3 Includes diploma or certificate from community college, CEGEP or nursing school.

4 Includes diploma or certificate from trade, technical or vocational school, or business college.

5 "Other" includes "No schooling".

"Not stated" category of educational attainment has been omitted from table but numbers are included in calculation of totals and percentages.

General Social Survey, 1989

TABLE 8

Employed population 15 years of age and over by educational enrollment, sex and occupation, Canada, 1989

Sex and occupation	Total employed population		Educational enrollment			
	No.	%	Currently enrolled		Not currently enrolled	
			No.	%	No.	%
(Numbers in thousands)						
Both sexes						
All occupations	12,155	100	1,704	14	10,451	86
Managerial/administration	1,919	100	190	10	1,729	90
Science/engineering	602	100	70	12	532	88
Social science	338	100	54	16	285	84
Teaching	681	100	135	20	546	80
Medicine/health	638	100	99	16	539	84
Artistic/literary	264	100	33	12	231	88
Clerical	1,975	100	309	16	1,666	84
Sales	1,032	100	196	19	836	81
Service	1,394	100	352	25	1,042	75
Primary	419	100	—	—	396	94
Manufacturing/processing	1,409	100	100	7	1,308	93
Construction/transportation	953	100	72	8	881	92
Other occupations	436	100	57	13	379	87
Not stated	94	100	—	—	80	85
Male						
All occupations	6,726	100	821	12	5,905	88
Managerial/administration	1,243	100	98	8	1,145	92
Science/engineering	478	100	45	9	433	91
Social science	179	100	27	15	153	85
Teaching	269	100	46	17	222	83
Medicine/health	153	100	—	—	139	91
Artistic/literary	128	100	—	—	119	93
Clerical	419	100	90	22	328	78
Sales	522	100	105	20	417	80
Service	585	100	160	27	425	73
Primary	352	100	—	—	334	95
Manufacturing/processing	1,121	100	97	9	1,025	91
Construction/transportation	891	100	66	7	824	93
Other occupations	327	100	33	10	294	90
Not stated	60	100	—	—	47	79
Female						
All occupations	5,428	100	882	16	4,546	84
Managerial/administration	675	100	92	14	584	86
Science/engineering	125	100	—	—	100	80
Social science	159	100	27	17	132	83
Teaching	412	100	88	21	324	79
Medicine/health	486	100	86	18	400	82
Artistic/literary	135	100	—	—	112	83
Clerical	1,556	100	218	14	1,338	86
Sales	510	100	91	18	419	82
Service	809	100	192	24	617	76
Primary	67	100	—	—	62	92
Manufacturing/processing	287	100	—	—	283	99
Construction/transportation	63	100	—	—	57	90
Other occupations	109	100	—	—	85	78
Not stated	35	100	—	—	33	96

"Not stated" category of educational enrollment has been omitted from table but numbers are included in calculation of total and percentages.

General Social Survey, 1989

TABLE 9

Employed population 15 years of age and over by plans for further education, sex and occupation, Canada, 1989

Sex and occupation	Total employed population				Plans for further education					
	Yes		No		Don't know		Not stated			
	No.	%	No.	%	No.	%	No.	%	No.	%
No. in thousands										
Both sexes										
All occupations	12,155	100	3,160	26	7,205	59	1,780	15	—	—
Managerial/administration	1,919	100	431	22	1,221	64	265	14	—	—
Science/engineering	602	100	166	27	335	56	102	17	—	—
Social science	338	100	98	29	211	62	30	9	—	—
Teaching	681	100	187	27	407	60	87	13	—	—
Medicine/health	638	100	154	24	405	63	79	12	—	—
Artistic/literary	264	100	62	23	172	65	30	11	—	—
Clerical	1,975	100	607	31	1,039	53	329	17	—	—
Sales	1,032	100	359	35	563	55	110	11	—	—
Service	1,394	100	469	34	705	51	213	15	—	—
Primary	419	100	58	14	318	76	43	10	—	—
Manufacturing/processing	1,409	100	264	19	887	63	256	18	—	—
Construction/transportation	953	100	190	20	619	65	144	15	—	—
Other occupations	436	100	99	23	256	59	81	19	—	—
Not stated	94	100	—	—	68	72	—	—	—	—
Male										
All occupations	6,726	100	1,584	24	4,269	63	872	13	—	—
Managerial/administration	1,243	100	249	20	846	68	149	12	—	—
Science/engineering	478	100	132	28	269	56	76	16	—	—
Social science	179	100	39	22	132	73	—	—	—	—
Teaching	269	100	58	22	178	66	33	12	—	—
Medicine/health	153	100	25	17	120	78	—	—	—	—
Artistic/literary	128	100	36	28	77	60	—	—	—	—
Clerical	419	100	128	31	240	57	51	12	—	—
Sales	522	100	194	37	286	55	42	8	—	—
Service	585	100	210	36	293	50	82	14	—	—
Primary	352	100	44	13	266	76	42	12	—	—
Manufacturing/processing	1,121	100	219	20	721	64	180	16	—	—
Construction/transportation	891	100	175	20	586	66	130	15	—	—
Other occupations	327	100	67	20	205	63	56	17	—	—
Not stated	60	100	—	—	52	87	—	—	—	—
Female										
All occupations	5,428	100	1,576	29	2,936	54	908	17	—	—
Managerial/administration	675	100	182	27	375	56	116	17	—	—
Science/engineering	125	100	33	27	66	53	26	21	—	—
Social science	159	100	59	37	79	50	—	—	—	—
Teaching	412	100	129	31	229	56	54	13	—	—
Medicine/health	486	100	129	27	285	59	72	15	—	—
Artistic/literary	135	100	26	19	95	70	—	—	—	—
Clerical	1,556	100	480	31	799	51	278	18	—	—
Sales	510	100	165	32	276	54	69	14	—	—
Service	809	100	259	32	413	51	131	16	—	—
Primary	67	100	—	—	52	78	—	—	—	—
Manufacturing/processing	287	100	45	16	166	58	76	26	—	—
Construction/transportation	63	100	—	—	33	52	—	—	—	—
Other occupations	109	100	32	30	51	47	26	24	—	—
Not stated	35	100	—	—	—	—	—	—	—	—

General Social Survey, 1989

TABLE 10

Employed population 15 years of age and over by level of education normally required for type of work performed, sex and occupation, Canada, 1989

Sex and occupation	Total employed population		Required education level							
			University degree ¹		Postsecondary diploma ²		Some postsecondary		High school diploma	
	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)										
Both sexes										
All occupations	12,155	100	2,156	18	2,399	20	441	4	2,947	24
Managerial/administration	1,919	100	625	33	343	18	99	5	433	23
Science/engineering	602	100	255	42	206	34	—	—	71	12
Social science	338	100	224	66	54	16	—	—	—	—
Teaching	681	100	524	77	50	7	—	—	27	4
Medicine/health	638	100	166	26	312	49	—	—	80	13
Artistic/literary	264	100	77	29	59	22	—	—	—	—
Clerical	1,975	100	78	4	479	24	125	6	737	37
Sales	1,032	100	94	9	106	10	—	—	373	36
Service	1,394	100	—	—	149	11	—	—	314	23
Primary	419	100	—	—	27	6	—	—	74	18
Manufacturing/processing	1,409	100	30	2	368	26	28	2	366	26
Construction/transportation	953	100	25	3	142	15	—	—	283	30
Other occupations	436	100	—	—	71	16	30	7	199	32
Not stated	94	100	—	—	33	35	—	—	—	—
Male										
All occupations	6,726	100	1,363	20	1,218	18	218	3	1,635	24
Managerial/administration	1,243	100	463	37	205	17	49	4	259	21
Science/engineering	478	100	217	45	160	33	—	—	48	10
Social science	179	100	149	83	—	—	—	—	—	—
Teaching	269	100	225	84	—	—	—	—	—	—
Medicine/health	153	100	95	62	31	20	—	—	—	—
Artistic/literary	128	100	30	23	35	27	—	—	—	—
Clerical	419	100	31	7	43	10	—	—	162	39
Sales	522	100	68	13	42	8	—	—	185	35
Service	585	100	—	—	81	14	—	—	174	30
Primary	352	100	—	—	—	—	—	—	56	16
Manufacturing/processing	1,121	100	—	—	354	32	28	2	327	29
Construction/transportation	891	100	—	—	140	16	—	—	267	30
Other occupations	327	100	—	—	68	21	—	—	120	37
Not stated	60	100	—	—	—	—	—	—	—	—
Female										
All occupations	5,428	100	794	15	1,181	22	223	4	1,313	24
Managerial/administration	675	100	162	24	138	20	50	7	174	26
Science/engineering	125	100	38	30	46	37	—	—	—	—
Social science	159	100	75	47	43	27	—	—	—	—
Teaching	412	100	299	73	40	10	—	—	—	—
Medicine/health	486	100	72	15	281	58	—	—	66	14
Artistic/literary	135	100	47	35	—	—	—	—	—	—
Clerical	1,556	100	47	3	435	28	110	7	575	37
Sales	510	100	26	5	64	13	—	—	188	37
Service	809	100	—	—	69	8	—	—	140	17
Primary	67	100	—	—	—	—	—	—	—	—
Manufacturing/processing	287	100	—	—	—	—	—	—	38	13
Construction/transportation	63	100	—	—	—	—	—	—	—	—
Other occupations	109	100	—	—	—	—	—	—	—	—
Not stated	35	100	—	—	—	—	—	—	—	—

TABLE 10

Employed population 15 years of age and over by level of education normally required for type of work performed, sex and occupation, Canada, 1989 — concluded

Sex and occupation	Required education level							
	Less than high school		No qualifications specified		Other		Don't know/not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All occupations	1,079	9	2,500	21	244	2	387	3
Managerial/administration	58	3	223	12	47	2	90	5
Science/engineering	—	—	25	4	—	—	—	—
Social science	—	—	—	—	—	—	—	—
Teaching	—	—	—	—	31	5	—	—
Medicine/health	—	—	30	5	—	—	—	—
Artistic/literary	—	—	72	27	—	—	—	—
Clerical	185	9	247	13	32	2	92	5
Sales	132	13	254	25	—	—	45	4
Service	258	19	579	42	—	—	29	2
Primary	49	12	228	54	—	—	—	—
Manufacturing/processing	158	11	404	29	—	—	35	2
Construction/transportation	158	17	262	27	32	3	27	3
Other occupations	44	10	132	30	—	—	—	—
Not stated	—	—	—	—	—	—	—	—
Male								
All occupations	669	10	1,330	20	129	2	164	2
Managerial/administration	48	4	146	12	27	2	45	4
Science/engineering	—	—	—	—	—	—	—	—
Social science	—	—	—	—	—	—	—	—
Teaching	—	—	—	—	—	—	—	—
Medicine/health	—	—	—	—	—	—	—	—
Artistic/literary	—	—	31	24	—	—	—	—
Clerical	71	17	85	20	—	—	—	—
Sales	72	14	119	23	—	—	—	—
Service	124	21	166	28	—	—	—	—
Primary	44	13	195	56	—	—	—	—
Manufacturing/processing	115	10	235	21	—	—	—	—
Construction/transportation	148	17	244	27	27	3	—	—
Other occupations	35	11	80	24	—	—	—	—
Not stated	—	—	—	—	—	—	—	—
Female								
All occupations	410	8	1,170	22	115	2	223	4
Managerial/administration	—	—	77	11	—	—	44	7
Science/engineering	—	—	—	—	—	—	—	—
Social science	—	—	—	—	—	—	—	—
Teaching	—	—	—	—	—	—	—	—
Medicine/health	—	—	27	5	—	—	—	—
Artistic/literary	—	—	41	30	—	—	—	—
Clerical	114	7	162	10	27	2	85	5
Sales	60	12	136	27	—	—	28	6
Service	134	17	414	51	—	—	—	—
Primary	—	—	33	49	—	—	—	—
Manufacturing/processing	42	15	169	59	—	—	—	—
Construction/transportation	—	—	—	—	—	—	—	—
Other occupations	—	—	52	47	—	—	—	—
Not stated	—	—	—	—	—	—	—	—

General Social Survey, 1989

¹ Includes masters, earned doctorate, bachelor, undergraduate degree or teacher's college.

² Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

TABLE 11

Employed population 15 years of age and over by job related to education, sex and educational attainment, Canada, 1989

Sex and educational attainment	Total employed population				Job related to education					
	Closely		Somewhat		Not at all		Not stated			
	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)										
Both sexes										
Total	12,155	100	4,323	36	2,522	21	5,225	43	85	1
Graduate degree ¹	653	100	547	84	55	8	51	8	—	—
Undergraduate degree ²	1,595	100	967	61	318	20	299	19	—	—
Community college diploma ³	1,188	100	733	62	193	16	257	22	—	—
Trade or technical diploma ⁴	1,686	100	933	55	303	18	440	26	—	—
High school diploma	3,672	100	833	23	1,063	29	1,745	48	31	1
Less than high school	3,260	100	262	8	573	18	2,396	74	29	1
Other ⁵	101	100	48	48	—	—	36	36	—	—
Not stated	—	—	—	—	—	—	—	—	—	—
Male										
Total	6,726	100	2,332	35	1,417	21	2,945	44	33	—
Graduate degree ¹	476	100	402	84	35	7	39	8	—	—
Undergraduate degree ²	856	100	505	59	206	24	140	16	—	—
Community college diploma ³	506	100	282	56	97	19	127	25	—	—
Trade or technical diploma ⁴	1,023	100	599	59	173	17	249	24	—	—
High school diploma	1,819	100	341	19	523	29	941	52	—	—
Less than high school	1,982	100	170	9	376	19	1,423	72	—	—
Other ⁵	64	100	33	51	—	—	26	40	—	—
Not stated	—	—	—	—	—	—	—	—	—	—
Female										
Total	5,428	100	1,991	37	1,105	20	2,280	42	52	1
Graduate degree ¹	177	100	145	82	—	—	—	—	—	—
Undergraduate degree ²	739	100	462	62	112	15	159	22	—	—
Community college diploma ³	682	100	451	66	95	14	131	19	—	—
Trade or technical diploma ⁴	663	100	334	50	131	20	191	29	—	—
High school diploma	1,853	100	492	27	540	29	804	43	—	—
Less than high school	1,278	100	92	7	197	15	973	76	—	—
Other ⁵	36	100	—	—	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—

1 Includes masters or earned doctorate.

2 Includes bachelor or undergraduate degree, or teacher's college.

3 Includes diploma or certificate from community college, CEGEP or nursing school.

4 Includes diploma or certificate from trade, technical or vocational school, or business college.

5 "Other" includes "No schooling".

General Social Survey, 1989

TABLE 12

Employed population 15 years of age and over by job overqualification, sex and educational attainment, Canada, 1989

Sex and educational attainment	Total employed population		Feel overqualified for job					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
Total	12,155	100	2,784	23	9,261	76	109	1
Graduate degree ¹	653	100	133	20	520	80	—	—
Undergraduate degree ²	1,595	100	360	23	1,225	77	—	—
Community college diploma ³	1,188	100	296	25	882	74	—	—
Trade or technical diploma ⁴	1,686	100	364	22	1,313	78	—	—
High school diploma	3,672	100	999	27	2,631	72	42	1
Less than high school	3,260	100	596	18	2,633	81	31	1
Other ⁵	101	100	36	36	56	56	—	—
Not stated	—	—	—	—	—	—	—	—
Male								
Total	6,726	100	1,428	21	5,242	78	56	1
Graduate degree ¹	476	100	81	17	395	83	—	—
Undergraduate degree ²	856	100	162	19	691	81	—	—
Community college diploma ³	506	100	127	25	376	74	—	—
Trade or technical diploma ⁴	1,023	100	205	20	817	80	—	—
High school diploma	1,819	100	478	26	1,316	72	—	—
Less than high school	1,982	100	351	18	1,615	81	—	—
Other ⁵	64	100	—	—	32	50	—	—
Not stated	—	—	—	—	—	—	—	—
Female								
Total	5,428	100	1,355	25	4,020	74	53	1
Graduate degree ¹	177	100	52	30	125	70	—	—
Undergraduate degree ²	739	100	198	27	534	72	—	—
Community college diploma ³	682	100	169	25	507	74	—	—
Trade or technical diploma ⁴	663	100	159	24	496	75	—	—
High school diploma	1,853	100	521	28	1,315	71	—	—
Less than high school	1,278	100	245	19	1,019	80	—	—
Other ⁵	36	100	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—

General Social Survey, 1989

1 Includes masters or earned doctorate.

2 Includes bachelor or undergraduate degree, or teacher's college.

3 Includes diploma or certificate from community college, CEGEP or nursing school.

4 Includes diploma or certificate from trade, technical or vocational school, or business college.

5 "Other" includes "No schooling".

TABLE 13

Employed population 15 years of age and over by perception of overqualification of job, sex and occupation, Canada, 1989

Sex and occupation	Total employed population		Overqualified for the job					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All occupations	12,155	100	2,784	23	9,261	76	109	1
Managerial/administration	1,919	100	307	16	1,584	83	28	1
Science/engineering	602	100	90	15	503	83	—	—
Social science	338	100	43	13	292	86	—	—
Teaching	681	100	71	10	610	90	—	—
Medicine/health	638	100	96	15	542	85	—	—
Artistic/literary	264	100	32	12	231	88	—	—
Clerical	1,975	100	588	30	1,366	69	—	—
Sales	1,032	100	315	30	706	68	—	—
Service	1,394	100	495	35	895	64	—	—
Primary	419	100	74	18	341	81	—	—
Manufacturing/processing	1,409	100	285	20	1,104	78	—	—
Construction/transportation	953	100	246	26	704	74	—	—
Other occupations	436	100	131	30	306	70	—	—
Not stated	94	100	—	—	78	83	—	—
Male								
All occupations	6,726	100	1,428	21	5,242	78	56	1
Managerial/administration	1,243	100	161	13	1,061	85	—	—
Science/engineering	478	100	67	14	407	85	—	—
Social science	179	100	—	—	166	92	—	—
Teaching	269	100	—	—	247	92	—	—
Medicine/health	153	100	—	—	145	95	—	—
Artistic/literary	128	100	—	—	114	89	—	—
Clerical	419	100	144	34	274	66	—	—
Sales	522	100	159	30	358	69	—	—
Service	585	100	232	40	353	60	—	—
Primary	352	100	69	20	279	79	—	—
Manufacturing/processing	1,121	100	204	18	903	80	—	—
Construction/transportation	891	100	228	26	660	74	—	—
Other occupations	327	100	99	30	228	70	—	—
Not stated	60	100	—	—	49	81	—	—
Female								
All occupations	5,428	100	1,355	25	4,020	74	53	1
Managerial/administration	675	100	145	22	523	77	—	—
Science/engineering	125	100	—	—	96	77	—	—
Social science	159	100	30	19	126	79	—	—
Teaching	412	100	49	12	364	88	—	—
Medicine/health	486	100	89	18	397	82	—	—
Artistic/literary	135	100	—	—	118	87	—	—
Clerical	1,556	100	444	29	1,091	70	—	—
Sales	510	100	156	31	348	68	—	—
Service	809	100	263	32	543	67	—	—
Primary	67	100	—	—	62	92	—	—
Manufacturing/processing	287	100	81	28	201	70	—	—
Construction/transportation	63	100	—	—	45	71	—	—
Other occupations	109	100	32	29	77	71	—	—
Not stated	35	100	—	—	29	85	—	—

General Social Survey, 1989

CHAPTER 4

COMPUTERS

This chapter documents computer training, skills and use; home computer ownership and use; and attitudes towards science and technology among the Canadian population aged 15 and over.

4.1 HIGHLIGHTS

- In 1989, 6.4 million Canadians, about one-third of those aged 15 and over, had taken a course on computer use.
- 9.6 million Canadians, or 47% of the adult population aged 15 and over, were able to use a computer.
- Ability to use a computer was highest among residents of Alberta, British Columbia and Ontario, and among individuals under age 25.
- Playing computer games was the most common use of a computer during the 12 months prior to the 1989 GSS, reported by 73% of users, followed by data entry and word processing (63%), record-keeping (48%), data analysis (32%) and programming (26%).
- Over 3.9 million Canadians, or 19% of adults aged 15 and over, had a personal computer at home.
- Home computer ownership was higher in the following sub-populations: residents of Ontario and British Columbia; 15-19-year-olds and 35-44-year-olds; the university educated; those with household incomes of \$60,000 or more; and those with two or more children living at home.
- Two-thirds of individuals with a computer at home actually used it themselves. Males, individuals under the age of 35 and those with a university degree were the heaviest users of home computers.
- Individuals who used a computer at home did so an average of 6.1 hours per week.

- Over four out of five Canadians believed that science and technology will make our lives better, while three-quarters believed they will make work more interesting. Only one-third agreed that computers and automation will create more jobs than they will eliminate.

4.2 INTRODUCTION

Computers are now an important part of daily life for a growing number of Canadians. The 1980s witnessed massive technological innovations as business, industry and educational institutions became increasingly reliant on computers. In the coming decade, computers will undoubtedly have an even greater impact on the work and personal lives of Canadians. Will automation benefit Canadian society as a whole, or will certain groups reap most of the advantages? Are Canadians computer literate, to the extent that they can do basic tasks on computers? How receptive are Canadians to technological change?

This chapter sheds light on these important questions by documenting the distribution of computer training, computer use and home computers within the Canadian population aged 15 and over. As well, the chapter examines Canadians' general attitudes toward technology. The 1989 GSS provides the most complete and reliable information available to date on how adult Canadians are adapting to, and participating in, the diffusion of micro-electronic technology.

4.3 METHODS

Two questions tapped ability to use a computer. The first of these asked: "Have you ever taken any courses on how to use computers?" Recognizing that taking a computer course is neither a prerequisite for being able to use a

computer nor an indicator of computer skills, a second question was posed: "Can you do anything on a computer, for example, play games, word processing or data entry?"

This latter question did not explicitly exclude common forms of computer technology, such as video games or automated banking machines. However, there are several reasons why the question gave a reasonably accurate estimate of computer use among Canadians aged 15 and over. It is unlikely that respondents would have confused these technologies with computers given the three examples presented in the question. Furthermore, interviewers conducting the survey over the telephone used a subsequent question on types of computer use to validate answers to this main computer use question. The question asked only those who reported that they were able to use a computer: "In the last 12 months, have you done any of the following on a computer: played games; word processing; data entry; record keeping; data analysis; programming; or anything else?"

A sequence of three questions documents access to, or ownership of, a home computer: 1) "Do you have a personal computer at home?"; 2) "Do you personally use that computer?"; and 3) "How many hours per week do you normally use it (actual hours were recorded)?"

Canadians' views about the impact of science and technology were also assessed in the 1989 GSS. Respondents were asked if they agreed or disagreed with the following statements: "Science and technology are making our lives better"; "Science and technology will make work more interesting"; and "On balance, computers and automation will create more jobs than they will eliminate." Possible responses to these questions included: agree somewhat; agree strongly; disagree somewhat; disagree strongly; and no opinion.

4.4 RESULTS

4.4.1 Computer training

Almost 6.4 million Canadians, about one-third of those aged 15 and over, had taken a course on computer use (Table 14). Alberta (35%) and Ontario (34%) residents were most likely to have taken a computer course. Newfoundlanders were the least likely to have taken a computer course (19%).

Computer training decreased dramatically with age, as is clear from Table 14. The greatest consumers of computer courses were in the 15 to 19 age range. Among teenagers, two-thirds of females and 61% of males had taken computer courses. Consistent with this gender difference among

teenagers, females under age 45 were more likely than males to have taken a computer course.

Slightly more than half of those individuals in the 20-24 age group (half of males, 55% of females) had taken computer courses. Both the 25-34 and 35-44 age groups exhibited a similar pattern in this regard. Specifically, somewhat over one-third of males and about 37% of females had taken a computer course.

A substantially lower proportion of individuals aged 45-54 (23% of both sexes) had taken computer courses. Few individuals aged 55 and over have had such training. What was notable about individuals over age 55 was, unlike the gender difference found among younger individuals, males were more likely than females to have taken computer courses.

Not surprisingly, computer training was related to one's level of education. This is evident from Table 15. Over half (57%) of individuals with a university degree had taken a computer course, compared with just over one-third of individuals with a high school diploma, and 17% who had not completed high school.

4.4.2 Computer skills

Taking a computer course does not necessarily ensure that one actually can use a computer. Nor is it true that all computer users would have gained these skills through formal courses. Thus, the computer literacy of Canadians can be judged by determining how many were able to use a computer.

About 9.6 million Canadians, comprising 47% of the population aged 15 and over, possessed the skills to use a computer (Table 14). Within this group, approximately 4 million individuals had never taken a computer course (table not shown). Provincially, computer skills varied from a high of 50% or more among residents in Alberta, British Columbia and Ontario, to around 40% or less in the Atlantic provinces and Quebec. In short, many Canadians were not relying on formal instruction to learn how to use computers.

Table 14 documents use patterns for males and females in each age group. Within the population as a whole, and within all but one age category, gender differences were minor. Despite the fact that relatively fewer males than females had taken computer courses, males were more likely to be able to use computers than females.

The most interesting finding in Table 14 is the extent to which the ability to use a computer was a youthful

phenomenon. More than four out of five teenagers and two-thirds of the 20-24 age group could use computers. This dropped to between 55% and 60% among baby boomers — individuals between the ages of 25 and 44. However, computer skills declined sharply among those 45 years and over.

These trends in computer skills suggest that a large majority of students would be active computer users. Considering the rapid diffusion of workplace automation in the last decade, it might also be expected that many employed individuals possess computer abilities.

Figure L compares individuals whose main activity in 1989 was working at a job or business with those whose main activity was being a student. The extent of computer skills among students was very high (78%). Over half (59%) of the employed also had computer skills. This latter figure is interesting given that many employees were in the 45-64 age range, where the level of computer literacy within the general population was relatively low.

Also noteworthy is the fact that the gender gap was wider in both groups than in the overall population. Males (82%) were predominant users among students, compared with 75% of females. However, the reverse was true for the employed (63% of females and 55% of males). This may

reflect the concentration of females in clerical and other office occupations where automation had advanced the furthest.

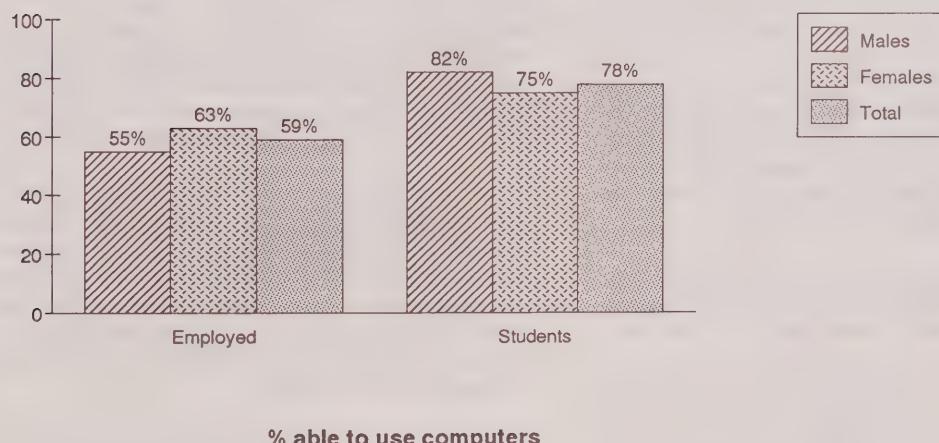
4.4.3 Types of computer use

Computers have a multitude of applications. Having noted above that about half of adult Canadians knew how do something on a computer, a further question arises: What specifically can they do? To begin, it is useful to know that of those claiming to be able to use computers, 16% did so exclusively to play games in the past 12 months (table not shown).

These computer game enthusiasts were most common in Newfoundland and Saskatchewan, where 33% and 27%, respectively, of computer users restricted their use to games only in the 12 months prior to the 1989 GSS. By contrast, comparable figures were considerably lower in Quebec (12%) and Ontario (14%).

Games-only computer users also tended to be concentrated among those with lower levels of education. Figure M reveals that while just over 7% of computer users with a university degree used this technology for games only in the past 12 months, this jumped to 25% among computer users with less than a high school education.

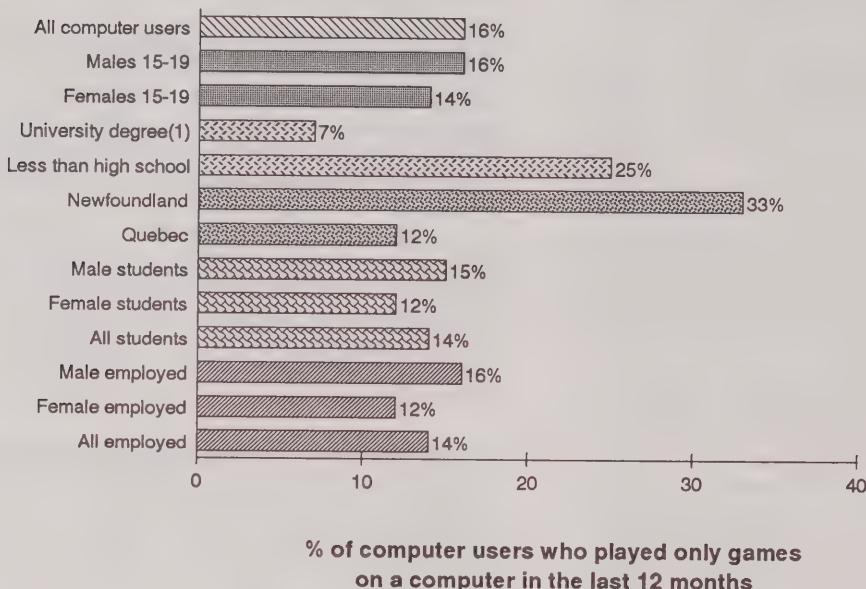
FIGURE L
Population 15 years of age and over who were employed or students by ability to use computers and by sex, Canada, 1989



General Social Survey, 1989

FIGURE M

Population 15 years of age and over who had used computers for games only in the last 12 months by selected characteristics, Canada, 1989



General Social Survey, 1989

(1) Includes masters, earned doctorate, bachelor or undergraduate degree, or teacher's college.

It would be tempting to assume that the high levels of computer use among teenagers, most of whom were students, was mainly due to their penchant for playing computer games. However, this was not the case. Only 16% of males and 14% of females aged 15-19 used a computer solely for games in the 12 months prior to the survey. Furthermore, the same proportion (14%) of students and employed individuals used computers just for games. In both of these categories, females were somewhat less likely than males to be games-only users.

Having established that relatively few Canadians with computer skills used this technology solely for games, more detailed patterns of computer usage can be examined.

Table 16 summarises types of computer use during the 12 months preceding the 1989 GSS, as reported by individuals with any kind of computer skills. The table gives the rank-order of six major uses by computer users aged 15 and older, nationally and provincially, as well as by

highest level of education attained. Playing computer games was the most common use, reported by 73% of users, followed by data entry and word processing (both 63%). Fewer than half (48%) of the users had undertaken computerized record-keeping, 32% had performed data analysis and 26% had programmed computers. Only 6% of users reported other applications beyond these six basic ones.

There were minor provincial variations in types of use during the past 12 months. Computer users in Quebec were least likely to have played games (66%). This contrasts sharply with over 80% of Saskatchewan and Newfoundland computer users who played computer games. Other uses, mainly involving information processing, tended to be low in the Atlantic provinces and high in Ontario, Quebec, Alberta and British Columbia.

Differences in use were more pronounced by level of education than by province of residence. Table 16 also shows that computer users with university degrees were

least likely to have played games in the past 12 months. Conversely, university-educated users reported the highest levels of the five information-processing uses.

The one anomaly in Table 16 is that comparable proportions of university-educated computer users and those with less than high school diplomas had performed computer programming in the past 12 months. The most probable explanation for this was the large number of students, many still in high school, who could program computers (Figure N). Other than this exception, it was clear that the use of computers for information processing increased with one's level of education.

Once again, it is useful to compare the employed with those whose main activity was going to school in terms of specific computer uses (Figure N). While 85% of students and 70% of employed reported playing games in the past 12 months, also, both groups extensively used computers for other purposes. Specifically, 76% of students and 63% of the employed did word processing and just under two-thirds of both groups had entered data. More of the employed than students performed record-keeping (52% versus 35%) or data analysis (36% versus 26%). However,

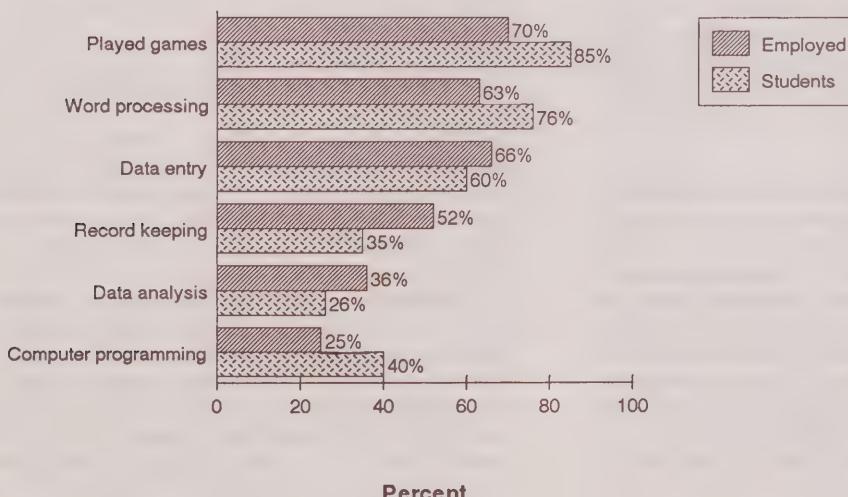
programming was more common among students (40%) than the employed (25%).

In summary, aside from playing computer games, what distinguished students from employed individuals in terms of computer use was the students' greater use of word processing and programming. This likely reflects the fact that many students would be using computers for class assignments and were doing programming as part of their basic computer training in school. Furthermore, it should be emphasized that sizeable minorities of students reported doing record-keeping and data analysis. Overall, students seemed to be equipped with a range of job-relevant computer skills. As these youth move into the labour force, an important issue will be the extent to which their computer literacy is made use of by employers.

4.4.4 Home computers

The comparisons of students and those whose main activity is working at a job or business suggest fairly widespread use of computers in workplaces and educational institutions. And with personal computers becoming smaller, more user-friendly and less costly, they have been transformed

FIGURE N
Population 15 years of age and over who could use computers and were employed or students by types of computer use in the last 12 months, Canada, 1989



General Social Survey, 1989

into a household technology. This diffusion of computers into homes will likely accelerate the trend toward an information-based society.

How far has the personal computer revolution advanced into Canadians' homes? According to Table 14, over 3.9 million Canadians, or 19% of individuals aged 15 and over, had a personal computer at home. In all but one age group, males were more likely than females to have home computers. The exception was the 35-44 age group, where a slightly higher proportion of females had home computers. Home computers were most prevalent among teenaged males (40%).

More generally, it is clear from Table 14 that two cohorts — 15-19 and 35-44 age groups — were at the forefront of the home computer trend, with 35% and 30%, respectively, having this household technology. Probably some individuals in the 35-44 age group were parents who purchased computers for their children's use. This may also be a factor in the relatively high proportion of home computers reported by 45-54-year-olds.

To explore this link between age and computers in the home one step further, 16% of individuals with no children in their household reported having a home computer (table not shown). In contrast, about 30% of individuals with two or more children living at home had a computer. To speculate for a moment, it may be that parents can better justify the purchase of a home computer when they have two or more children as potential users.

Interestingly, individuals between the ages of 20-34 were considerably less likely than teenagers or 35-54-year-olds to have home computers. Furthermore, consistent with the low level of computer training and abilities among older Canadians, relatively few individuals over the age of 55 had home computers.

Tables 14 and 15 show that province of residence, level of education and household income were directly associated with home computer ownership. Residents of Ontario and British Columbia had the highest levels of home computer ownership, especially in comparison with New Brunswick and Manitoba residents, who had the lowest levels. More than one in three individuals with a university degree or with a household income over \$60,000 (characteristics which are closely related) had home computers. This compared with about one in five (or fewer) of those with either lower educational levels or household incomes.

4.4.5 Use of home computers

How many of the 3.9 million Canadians with home computers actually used them? Turning to Table 17, it is

observed that two-thirds of individuals with a computer at home actually used it. Males (72%) were more extensive users of home computers than females (60%). However, this gender difference was least pronounced in the 15-24 age group. Adults under the age of 35 used home computers more than individuals in older age groups. Indeed, close to three out of four computer owners between the ages of 15 and 34 used their home computers.

Education level also influenced home computer use. Over three-quarters (76%) of university-educated individuals with home computers used them. By comparison, roughly two-thirds of individuals with postsecondary diplomas (64%) or high school diplomas (67%) used their home computers.

Individuals who had home computers and actually used them reported an average of 6.1 hours weekly use. Males used home computers an average of 6.7 hours weekly, somewhat more than the 5.2 hours of use which females reported (table not shown). The majority of home computer users (65%) fell into the 1.0 - 5.0 hours per week category. In contrast, 10% typically use their home computer between 11.0 - 20.0 hours weekly, while only 4% reported 21.0 or more hours of weekly use.

Home computers were not used mainly for recreational purposes such as playing games. Only 6% of home computer users had used any computer exclusively to play games in the last 12 months (table not shown). It was also evident that few individuals (16%) with home computers lacked the ability to do anything on a computer. What the 1989 GSS did not reveal was how much home computer use was job-related.

4.4.6 Attitudes towards science and technology

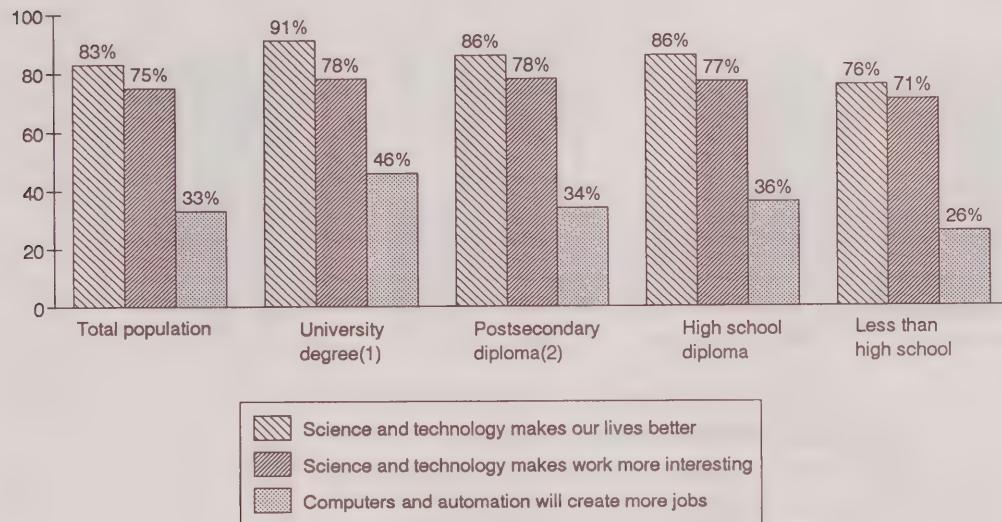
The diffusion of computer technology shapes, and in turn is affected by, public perceptions of its impact. For example, positive attitudes towards new technology will translate into a greater receptivity to the use of computers at work, school and home.

Figure O reports the percentage of the population aged 15 and over who agreed with the following statements: "Science and technology are making our lives better"; "Science and technology will make work more interesting"; and "On balance, computers and automation will create more jobs than they will eliminate." Over four out of five Canadians believed that science and technology will make our lives better, while three-quarters believed they will make work more interesting. However, only one-third agreed that computers and automation will contribute to job creation.

FIGURE O

Population 15 years of age and over by attitudes towards science and technology and educational attainment, Canada, 1989

% agreeing



General Social Survey, 1989

(1) Includes masters, earned doctorate, bachelor or undergraduate degree, or teacher's college.

(2) Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

These attitudes varied somewhat by level of education. The more education an individual had, the more positively he or she assessed the impact of science and technology. The greatest difference in this regard concerns the belief that automation will create jobs. Close to half (46%) of those with a university degree subscribed to this view, compared with only 26% of individuals with less than a high school diploma. This could stem from the greater vulnerability of less-educated workers to the negative effects of technology, lack of information about new technologies or having little in the way of computer-related skills or experience.

Figure P compares the employed with students. There were small gender differences in attitudes within each group. Overall, students and employees were very positive about the effects of science and technology on people's

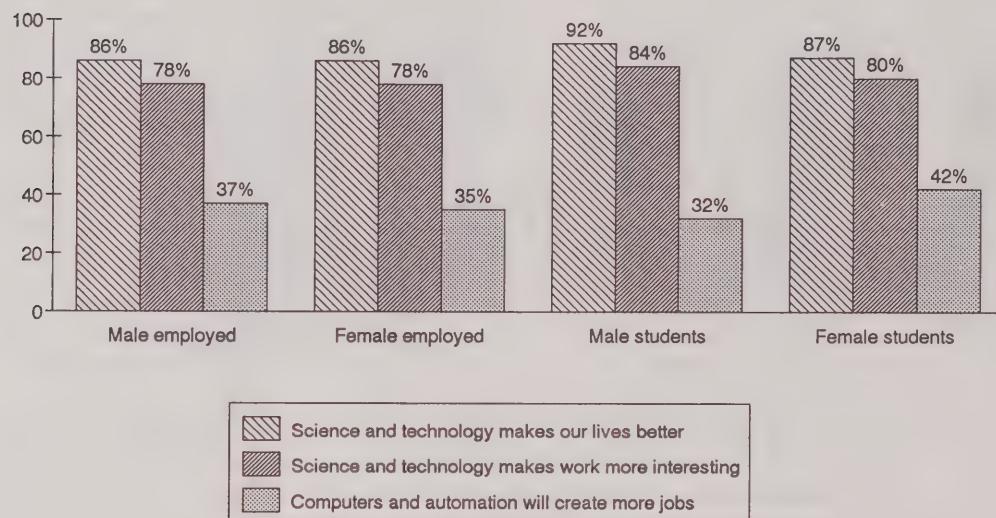
lives generally and on work. And they equally shared reservations about the ability of automation to create new jobs.

Figure Q divides those whose main activity was working at a job or business into three major occupational categories. Again, there was pervasive agreement that science and technology will make lives better and work interesting. But views about the effects of automation on the number of jobs varied systematically by occupational group. While 43% of managerial and professional employees believed that automation will contribute to job creation, 35% of people in clerical, sales and service jobs, and 29% of blue-collar employees held this view. As with the findings regarding education and attitudes, underlying this pattern was the unequal impact of automation whereby more benefits accrue to higher status occupations.

FIGURE P

Population 15 years of age and who were employed or students by attitudes towards science and technology and by sex, Canada, 1989

% agreeing



General Social Survey, 1989

Attitudes also varied considerably by one's ability to use a computer and access to a computer. Figure R documents that computer users, as well as individuals with home computers, were more positive in their assessments of science and technology than were individuals who either could not use a computer or who did not have one at home. In short, familiarity with new technology seems to foster the belief that it will benefit society.

4.5 DISCUSSION

The 1989 GSS showed that large numbers of Canadians had computer skills and, moreover, used computers in the past 12 months. About one-third of Canadians aged 15 and over had taken a computer course and almost half could use a computer. Home computers were becoming more common, with about one in five individuals having access to one. Canadians also had positive attitudes regarding the impact of science and technology on their lives and work; however, the majority did not believe that automation will create more jobs.

Several socio-demographic factors helped to explain the distribution of computer skills and use. Age was strongly associated with these trends. Canadians over the age of 55 were far less likely than teenagers, young adults or baby boomers to have taken a computer course or to know how to use a computer. Similarly, home computer ownership was lowest among those aged 55 and over.

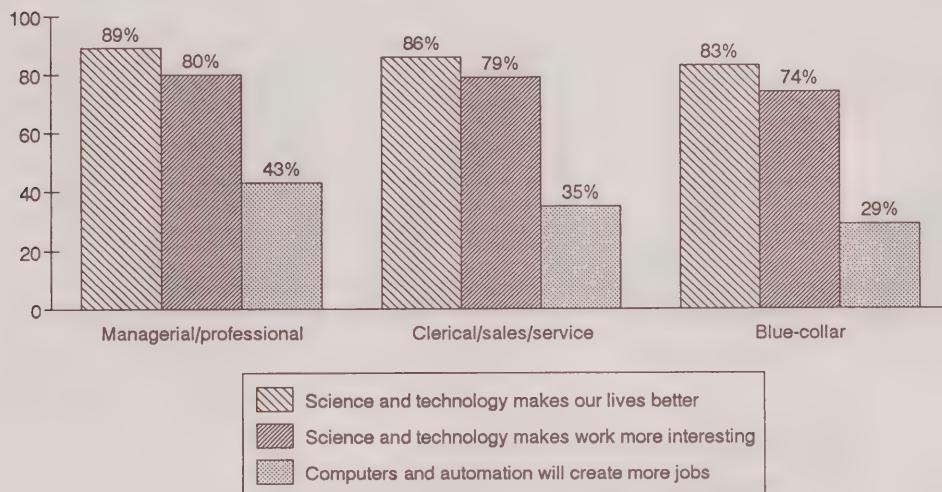
A higher level of education, particularly a university degree, was also a good predictor of computer training, skills and ownership. And with some exceptions, there was a clear regional pattern in this regard. Training, skills and home computer ownership were below the national average in the Atlantic provinces and well above it in Ontario, Alberta and British Columbia. Finally, it was not surprising that a high household income was associated with home computer ownership.

These findings lend credence to the view that computer technology was an emergent source of inequality in Canadian society. Computer skills, or computer literacy,

FIGURE Q

Employed population 15 years of age and over by attitudes towards science and technology and major occupational groups, Canada, 1989

% agreeing



General Social Survey, 1989

can confer human capital advantages in schools or in the workplace. Existing social inequalities thus could be accentuated if the better-educated and more affluent are the ones mainly benefitting from computer technology.

A major limitation to this argument, however, was the 1989 GSS finding that computer training, use and ownership were highest among teenagers. For the next generation, then, the potential for computers to contribute to socio-economic polarization may diminish.

Gender differences also deserve further comment. Previous Canadian studies found little overall difference between males and females in computer training and use.¹⁻² Through its more thorough analysis of this issue, the 1989 GSS presented a different picture.

Specifically, below the age of 45 proportionally more females than males had taken computer courses. However, a slightly higher proportion of males could use a computer. Male students reported higher use than females, and males with home computers were more likely to use them than the comparable group of females. Yet among the employed,

females were the predominant users. Underlying this is the gender composition of occupations, with females concentrated in lower-level office jobs where automation has had a pervasive impact.³⁻⁴

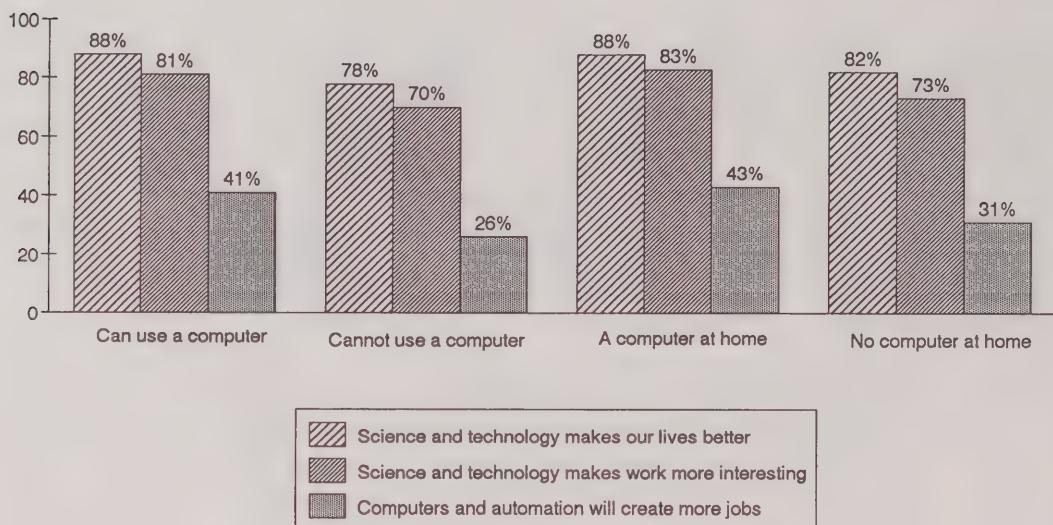
The level of home computer ownership appears to be sharply increasing, based on the 1989 GSS findings, where 19% of Canadians had a computer at home. According to Statistics Canada's Household Facilities and Equipment Survey (HFES), the percentage of Canadian households with home computers rose from 12.6% in 1988 to 16.3% in 1990.⁵ The lower estimates found in the HFES may be due to the fact that the HFES records computer ownership by household, not by individual as in the GSS. The two surveys do converge somewhat in the high household income bracket. The HFES found that 34% of households with incomes of \$70,000 and over had computers in 1990.⁶ The roughly comparable figure from the 1989 GSS, for individuals with household incomes of \$60,000 and higher, was 36%.

Another way to gauge the diffusion of computers into homes is to compare the 1989 GSS results with United

FIGURE R

Population 15 years of age and over by attitudes towards science and technology and computer use then home ownership of a computer, Canada, 1989

% agreeing



General Social Survey, 1989

States' trends. According to the October 1989 United States' Bureau of the Census's Current Population Survey (CPS), 24% of children aged 3-17 had access to a computer at home, as did 17% of adults aged 18 and over.⁷ This represented a substantial jump in home computers since 1984, when comparable figures for these two age groups were 15% and 9%, respectively.⁸ While the CPS findings were not directly comparable to the 1989 GSS, it would appear that by 1989 Canada and the United States had similar levels of home computer ownership — both around the 20% range.

Turning finally to attitudes towards science and technology, the 1989 GSS findings corroborated those from other attitude surveys. A 1987 CROP poll of a national sample of Canadians found that 71% believed that computers had a beneficial effect on the quality of work performed, with computer users more supportive of this view than non-users.⁹ A national Gallup poll taken in May 1988 found that 59% of Canadians believed that computers will make

life easier for them, up from 39% in 1984.¹⁰ Those with home computers, and younger individuals, were more likely to hold this view. And according to a 1989 national survey of 2,000 adults, 80% thought that science and technology were making their lives healthier, easier and more comfortable.¹¹

In sum, the 1989 GSS provides the strongest evidence thus far that Canadians view science and technology as beneficial both in and out of the workplace. Yet the GSS results inject a note of scepticism into this positive image of a high-tech future: Canadians were also concerned that automation will do little to generate new jobs. What, then, have been the experiences of employed Canadians with regard to work place automation? What has shaped this more negative assessment of the impact of technology on job creation? These questions will be addressed by examining the use of computers in the workplace and employed individuals' assessments how automation has affected their work.

NOTES

1. Deschenes, Lucie. *Computers in Daily Life: Canadian's Behaviour and Attitudes Regarding Computer Technology*. (Ottawa: Department of Communications, Canadian Workplace Automation Research Centre, 1989).
2. Lowe, Graham S. and Harvey Krahn. "Computer Skills and Use Among High School and University Graduates." *Canadian Public Policy*, 15 (1989), p. 175-188.
3. Betcherman, Gordon and Kathryn McMullen. *Working With New Technology: A Survey of Automation in Canada*. (Ottawa: Economic Council of Canada, 1986).
4. Economic Council of Canada. *Innovation and Jobs in Canada*. (Ottawa: Supply and Services Canada, 1987)
5. Statistics Canada. *Household Facilities and Equipment*. (Ottawa: Statistics Canada, 1990).
6. Statistics Canada. *Household Facilities by Income and Other Characteristics*. (Ottawa: Statistics Canada, 1990), p. 31.
7. Kominski, Robert. *Computer Use in the United States: 1989*. Current Population Reports, Special Studies, Series P-23, No. 171. United States Department of Commerce, p. 3.
8. Kominski, ibid, p. 3. The CPS found that 8% of all United States households owned computers in 1984, compared with 15% in 1989.
9. Deschenes, op cit.
10. Gallup Canada, Inc., Release of June 2, 1988.
11. Tausig, Christine. "Science survey: scores low, interest high." *University Affairs*. (April 1990), p. 3-4.

TABLE 14

Population 15 years of age and over by computer courses taken then use of computers then home ownership of a computer, sex and age group then province, Canada, 1989

Sex and age group then province	Total population		Computer courses taken					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All age groups	20,248	100	6,387	32	13,832	68	28	—
15-19	1,860	100	1,178	63	681	37	—	—
20-24	2,053	100	1,082	53	969	47	—	—
25-34	4,667	100	1,690	36	2,974	64	—	—
35-44	3,934	100	1,391	35	2,535	64	—	—
45-54	2,695	100	618	23	2,070	77	—	—
55-64	2,323	100	282	12	2,037	88	—	—
65 +	2,716	100	145	5	2,565	94	—	—
Male								
All age groups	9,903	100	3,134	32	6,753	68	—	—
15-19	951	100	581	61	370	39	—	—
20-24	1,038	100	522	50	515	50	—	—
25-34	2,317	100	804	35	1,510	65	—	—
35-44	1,962	100	672	34	1,287	66	—	—
45-54	1,342	100	306	23	1,029	77	—	—
55-64	1,136	100	168	15	969	85	—	—
65 +	1,157	100	81	7	1,073	93	—	—
Female								
All age groups	10,345	100	3,253	31	7,080	68	—	—
15-19	909	100	597	66	311	34	—	—
20-24	1,015	100	560	55	454	45	—	—
25-34	2,350	100	886	38	1,464	62	—	—
35-44	1,972	100	719	36	1,249	63	—	—
45-54	1,353	100	312	23	1,041	77	—	—
55-64	1,187	100	115	10	1,068	90	—	—
65 +	1,559	100	64	4	1,493	96	—	—
Province								
Canada	20,248	100	6,387	32	13,832	68	28	—
Newfoundland	427	100	80	19	347	81	—	—
Prince Edward Island	98	100	25	26	73	74	—	—
Nova Scotia	690	100	190	28	499	72	—	—
New Brunswick	551	100	141	26	407	74	—	—
Quebec	5,231	100	1,544	30	3,683	70	—	—
Ontario	7,469	100	2,571	34	4,886	65	—	—
Manitoba	829	100	217	26	612	74	—	—
Saskatchewan	749	100	207	28	541	72	—	—
Alberta	1,823	100	639	35	1,184	65	—	—
British Columbia	2,381	100	772	32	1,602	67	—	—

TABLE 14

Population 15 years of age and over by computer courses taken then use of computers then home ownership of a computer, sex and age group then province, Canada, 1989 — concluded

Sex and age group then province	Use of computers						Home ownership of a computer					
	Yes		No		Not stated		Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Both sexes												
All age groups	9,580	47	10,658	53	—	—	3,936	19	16,277	80	35	—
15-19	1,530	82	330	18	—	—	653	35	1,207	65	—	—
20-24	1,355	66	698	34	—	—	324	16	1,724	84	—	—
25-34	2,799	60	1,868	40	—	—	794	17	3,872	83	—	—
35-44	2,205	56	1,723	44	—	—	1,187	30	2,741	70	—	—
45-54	1,022	38	1,670	62	—	—	667	25	2,017	75	—	—
55-64	503	22	1,820	78	—	—	236	10	2,087	90	—	—
65 +	164	6	2,549	94	—	—	76	3	2,629	97	—	—
Male												
All age groups	4,797	48	5,103	52	—	—	2,117	21	7,776	79	—	—
15-19	791	83	160	17	—	—	380	40	571	60	—	—
20-24	675	65	362	35	—	—	210	20	827	80	—	—
25-34	1,375	59	942	41	—	—	423	18	1,894	82	—	—
35-44	1,079	55	883	45	—	—	568	29	1,393	71	—	—
45-54	520	39	819	61	—	—	354	26	983	73	—	—
55-64	274	24	862	76	—	—	137	12	999	88	—	—
65 +	83	7	1,074	93	—	—	45	4	1,109	96	—	—
Female												
All age groups	4,783	46	5,555	54	—	—	1,819	18	8,501	82	25	—
15-19	739	81	169	19	—	—	272	30	636	70	—	—
20-24	680	67	336	33	—	—	113	11	897	88	—	—
25-34	1,424	61	925	39	—	—	372	16	1,977	84	—	—
35-44	1,128	57	840	43	—	—	619	31	1,347	68	—	—
45-54	502	37	851	63	—	—	313	23	1,034	76	—	—
55-64	229	19	958	81	—	—	98	8	1,089	92	—	—
65 +	81	5	1,475	95	—	—	31	2	1,521	98	—	—
Province												
Canada	9,580	47	10,658	53	—	—	3,936	19	16,277	80	35	—
Newfoundland	162	38	264	62	—	—	75	17	352	83	—	—
Prince Edward Island	37	38	61	62	—	—	—	—	91	92	—	—
Nova Scotia	286	41	403	58	—	—	114	16	575	83	—	—
New Brunswick	222	40	329	60	—	—	79	14	465	84	—	—
Quebec	2,112	40	3,114	60	—	—	863	17	4,363	83	—	—
Ontario	3,845	51	3,621	48	—	—	1,693	23	5,766	77	—	—
Manitoba	376	45	453	55	—	—	111	13	718	87	—	—
Saskatchewan	345	46	404	54	—	—	121	16	628	84	—	—
Alberta	1,005	55	818	45	—	—	361	20	1,462	80	—	—
British Columbia	1,190	50	1,191	50	—	—	512	22	1,857	78	—	—

General Social Survey, 1989

TABLE 15

Population 15 years of age and over by computer courses taken then home ownership of a computer, sex and educational attainment then household income, Canada, 1989

Sex and educational attainment then household income	Total population		Computer courses taken						Home ownership of a computer									
			Yes			No			Not stated			Yes			No			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)																		
Both sexes																		
Total	20,248	100	6,387	32	13,832	68	28	—	3,936	19	16,277	80	35	—	—	—	—	—
University degree ¹	2,832	100	1,622	57	1,208	43	—	—	991	35	1,841	65	—	—	—	—	—	—
Postsecondary diploma ²	3,933	100	1,463	37	2,460	63	—	—	791	20	3,134	80	—	—	—	—	—	—
High school diploma	5,676	100	1,985	35	3,684	65	—	—	1,098	19	4,568	80	—	—	—	—	—	—
Less than high school	7,588	100	1,273	17	6,306	83	—	—	1,028	14	6,544	86	—	—	—	—	—	—
Other ³	214	100	43	20	171	80	—	—	28	13	186	87	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Male																		
Total	9,903	100	3,134	32	6,753	68	—	—	2,117	21	7,776	79	—	—	—	—	—	—
University degree ¹	1,543	100	955	62	588	38	—	—	591	38	951	62	—	—	—	—	—	—
Postsecondary diploma ²	1,910	100	660	35	1,243	65	—	—	389	20	1,517	79	—	—	—	—	—	—
High school diploma	2,580	100	855	33	1,721	67	—	—	557	22	2,020	78	—	—	—	—	—	—
Less than high school	3,745	100	632	17	3,107	83	—	—	562	15	3,179	85	—	—	—	—	—	—
Other ³	125	100	33	26	93	74	—	—	—	—	108	86	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Female																		
Total	10,345	100	3,253	31	7,080	68	—	—	1,819	18	8,501	82	25	—	—	—	—	—
University degree ¹	1,290	100	667	52	620	48	—	—	400	31	890	69	—	—	—	—	—	—
Postsecondary diploma ²	2,024	100	804	40	1,217	60	—	—	402	20	1,617	80	—	—	—	—	—	—
High school diploma	3,096	100	1,131	37	1,962	63	—	—	541	17	2,547	82	—	—	—	—	—	—
Less than high school	3,843	100	641	17	3,198	83	—	—	465	12	3,365	88	—	—	—	—	—	—
Other ³	89	100	—	—	79	88	—	—	—	—	78	88	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Household income																		
Total	20,248	100	6,387	32	13,832	68	28	—	3,936	19	16,277	80	35	—	—	—	—	—
Less than \$30,000	5,807	100	1,184	20	4,615	79	—	—	578	10	5,220	90	—	—	—	—	—	—
\$30,000 to \$59,999	6,748	100	2,340	35	4,406	65	—	—	1,476	22	5,273	78	—	—	—	—	—	—
Over \$60,000	2,947	100	1,424	48	1,522	52	—	—	1,067	36	1,878	64	—	—	—	—	—	—
Don't know	3,341	100	1,117	33	2,216	66	—	—	588	18	2,737	82	—	—	—	—	—	—
Not stated	1,405	100	322	23	1,073	76	—	—	227	16	1,170	83	—	—	—	—	—	—

General Social Survey, 1989

¹ Includes masters, earned doctorate, bachelor, undergraduate degree or teacher's college.

² Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

³ "Other" includes "No schooling".

TABLE 16

Population 15 years of age and over who could use computers by specific computer tasks and province then sex and educational attainment, Canada, 1989

Province then sex and educational attainment	Total population		Computer uses						
	Played games ¹		Data entry ¹		Word processing ¹		Recordkeeping ¹		
	No.	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)									
Province									
Canada	9,580	7,021	73	6,052	63	6,013	63	4,564	48
Newfoundland	162	135	83	80	49	62	38	58	36
Prince Edward Island	37	28	76	—	—	—	—	—	—
Nova Scotia	286	217	76	173	61	158	55	133	47
New Brunswick	222	159	72	127	57	102	46	84	38
Quebec	2,112	1,389	66	1,462	69	1,302	62	971	46
Ontario	3,845	2,893	75	2,349	61	2,599	68	1,926	50
Manitoba	376	282	75	227	60	211	56	181	48
Saskatchewan	345	279	81	198	58	183	53	132	38
Alberta	1,005	758	75	656	65	630	63	472	47
British Columbia	1,190	880	74	760	64	748	63	593	50
Both sexes									
Total	9,580	7,021	73	6,052	63	6,013	63	4,564	48
University degree ²	1,934	1,280	66	1,380	71	1,506	78	1,137	59
Postsecondary diploma ³	2,129	1,499	70	1,361	64	1,291	61	1,068	50
High school diploma	3,230	2,341	72	2,112	65	1,958	61	1,532	47
Less than high school	2,216	1,846	83	1,155	52	1,221	55	794	36
Other ⁴	71	55	78	44	62	37	52	33	47
Male									
Total	4,797	3,775	79	2,995	62	2,947	61	2,315	48
University degree ²	1,157	812	70	869	75	916	79	726	63
Postsecondary diploma ³	995	775	78	621	62	562	56	503	51
High school diploma	1,435	1,140	79	888	62	807	56	619	43
Less than high school	1,168	1,016	87	589	50	636	54	446	38
Other ⁴	42	32	76	29	68	27	64	—	—
Female									
Total	4,783	3,246	68	3,056	64	3,066	64	2,249	47
University degree ²	777	467	60	511	66	590	76	411	53
Postsecondary diploma ³	1,134	724	64	740	65	730	64	565	50
High school diploma	1,795	1,202	67	1,223	68	1,152	64	913	51
Less than high school	1,049	830	79	566	54	584	56	349	33
Other ⁴	29	—	—	—	—	—	—	—	—

TABLE 16

Population 15 years of age and over who could use computers by specific computer tasks and province then sex and educational attainment, Canada, 1989 — concluded

Province then sex and educational attainment	Computer uses							
	Data analysis ¹		Programming ¹		Anything else ¹		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Province								
Canada	3,109	32	2,445	26	607	6	—	—
Newfoundland	39	24	31	19	—	—	—	—
Prince Edward Island	—	—	—	—	—	—	—	—
Nova Scotia	90	32	66	23	—	—	—	—
New Brunswick	35	16	43	19	—	—	—	—
Quebec	804	38	592	28	126	6	—	—
Ontario	1,290	34	1,122	29	277	7	—	—
Manitoba	116	31	86	23	—	—	—	—
Saskatchewan	84	24	67	19	—	—	—	—
Alberta	300	30	212	21	46	5	—	—
British Columbia	340	29	217	18	102	9	—	—
Both sexes								
Total	3,109	32	2,445	26	607	6	—	—
University degree ²	986	51	603	31	216	11	—	—
Postsecondary diploma ³	740	35	475	22	158	7	—	—
High school diploma	957	30	653	20	141	4	—	—
Less than high school	402	18	704	32	78	4	—	—
Other ⁴	—	—	—	—	—	—	—	—
Male								
Total	1,824	38	1,501	31	380	8	—	—
University degree ²	708	61	456	39	152	13	—	—
Postsecondary diploma ³	402	40	291	29	106	11	—	—
High school diploma	478	33	352	24	58	4	—	—
Less than high school	217	19	396	34	48	4	—	—
Other ⁴	—	—	—	—	—	—	—	—
Female								
Total	1,284	27	944	20	227	5	—	—
University degree ²	278	36	147	19	63	8	—	—
Postsecondary diploma ³	338	30	184	16	51	5	—	—
High school diploma	479	27	302	17	82	5	—	—
Less than high school	185	18	308	29	30	3	—	—
Other ⁴	—	—	—	—	—	—	—	—

¹ Number and proportion do not add to totals as these are separate variables. Only number and proportion of affirmative responses shown.

² Includes masters, earned doctorate, bachelor, undergraduate degree or teacher's college.

³ Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

⁴ "Other" includes "No schooling".

General Social Survey, 1989

TABLE 17

Population 15 years of age and over who had a computer at home by use of home computers, sex and age group then educational attainment, Canada, 1989

Sex and age group then educational attainment	Total population		Use of home computers					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All age groups	3,936	100	2,601	66	1,305	33	30	1
15-19	653	100	477	73	176	27	—	—
20-24	324	100	236	73	80	25	—	—
25-34	794	100	592	75	195	25	—	—
35-44	1,187	100	771	65	406	34	—	—
45-54	667	100	376	56	291	44	—	—
55-64	236	100	124	53	109	46	—	—
65 +	76	100	25	33	48	63	—	—
Male								
All age groups	2,117	100	1,519	72	589	28	—	—
15-19	380	100	285	75	95	25	—	—
20-24	210	100	154	73	48	23	—	—
25-34	423	100	350	83	73	17	—	—
35-44	568	100	407	72	160	28	—	—
45-54	354	100	223	63	131	37	—	—
55-64	137	100	80	58	57	42	—	—
65 +	45	100	—	—	—	—	—	—
Female								
All age groups	1,819	100	1,083	60	716	39	—	—
15-19	272	100	192	70	81	30	—	—
20-24	113	100	81	72	32	28	—	—
25-34	372	100	243	65	122	33	—	—
35-44	619	100	365	59	246	40	—	—
45-54	313	100	153	49	160	51	—	—
55-64	98	100	44	45	52	53	—	—
65 +	31	100	—	—	—	—	—	—
Educational attainment								
Total	3,936	100	2,601	66	1,305	33	30	1
University degree ¹	991	100	753	76	235	24	—	—
Postsecondary diploma ²	791	100	502	64	278	35	—	—
High school diploma	1,098	100	739	67	348	32	—	—
Less than high school	1,028	100	593	58	429	42	—	—
Other ³	28	100	—	—	—	—	—	—

General Social Survey, 1989

1 Includes masters, earned doctorate, bachelor, undergraduate degree or teacher's college.

2 Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

3 "Other" includes "No schooling".

CHAPTER 5

COMPUTERS IN THE WORKPLACE

This chapter explores three key aspects of workplace automation: the characteristics of employees most likely to be using mainframe computers, personal computers, and word processors; how the introduction of computers and automated technology affected the employed labour force during the 1984-1989 period; and job loss resulting from technological change.

5.1 HIGHLIGHTS

- More than one-third of those employed at the time of the 1989 GSS (4.2 million individuals) reported using computers, such as mainframes, personal computers, or word processors in their job.
- 38% of females used computers in their work, compared with 32% of males.
- On-the-job computer use was below the national average in Newfoundland, New Brunswick and Saskatchewan, and above it in Ontario, Alberta and British Columbia.
- Over three-quarters of individuals in science and engineering, 55% of clerical workers, and 52% of managers and administrators used computers in their job.
- Three out of four financial industry workers used computers in their job, as did half of the workers in public administration and 49% in business services.
- Jobs which were either secure, full-time, middle management positions or in large organizations had higher than average rates of computer use.
- Computer users worked an average of 16.2 hours weekly on their machines.
- 29% of the employed reported that their work had been greatly affected by the introduction of computers or automated technology in the last five years, whereas 41% encountered no effects at all.

- Two-thirds of workers whose jobs had been greatly or somewhat affected by technological change during the 1984-1989 period, reported increased skills as a result.
- Only 19% of the employed whose jobs had been affected by technological change had benefited from increased job security as a result while 11% reported a decrease in job security.
- 61% of the employed affected by automation reported that it had made their work more interesting.

5.2 INTRODUCTION

Spectacular advances in micro-electronic technologies are transforming the workplace. Over the past decade, the impact of technological change on employment opportunities, job content and work rewards has been widely discussed. Indeed, the debate has polarized around positive and negative perspectives.¹⁻⁶ The positive image of an emerging post-industrial society emphasizes personal and social advantages of work in high-technology and information-intensive service industries. According to this scenario, jobs will be more challenging and rewarding, offering employees more control over where, when and how to do their work. Critics, however, raise serious doubts: Will more efficient technologies mean fewer jobs? Will automation deskill work and diminish the overall quality of working life? And if there are benefits from automation, who will be the winners?

With the exception of research by the Economic Council of Canada, few national studies have examined the extent and impact of technological changes in the workplace.⁷⁻⁸

Thus it is difficult to evaluate these competing perspectives on new technologies. This chapter injects some new evidence into the debate using data from the 1989 GSS.

5.3 METHODS

The 1989 GSS illuminated three central aspects of workplace automation. First, it documented the characteristics of the employed work force most likely to be using mainframe computers, personal computers, and word processors. Respondents whose main activity at the time of the survey was working at a job or business were asked: "Do you use computers such as mainframes, personal computers or word processors in your job?". This question captured office automation, which accounted for the majority of workplace technological innovations in the last decade.⁹ However, the 1989 GSS did not examine the use of new industrial technologies such as robots, computer numerically controlled machines, computer-assisted manufacturing, or automated material handling systems.

The 1989 GSS asked workers who used computers in their job: "How many hours per week do you normally use (computer) equipment?" However, the survey did not examine how workers in different occupations defined computer use when answering this question.

Second, shifting to a broader focus on computers and automated technology, the 1989 GSS addressed how these innovations affected the employed work force during the 1984-1989 period. Employed respondents were asked: "In the last five years, how much has your work been affected by the introduction of computers or automated technology? Would you say... Greatly? Somewhat? Hardly? Not at all?" Individuals who answered "greatly" or "somewhat" were then asked a series of questions designed to determine the impact of computers or automated technology on job skills, job security, and intrinsic interest in the last five years. Specifically, this group of respondents was asked: "Has the level of skill required to perform your work increased, decreased, or stayed the same?"; "Has the job security increased, decreased, or stayed the same?"; "Has your work become more interesting, less interesting, or stayed the same?"

Third, the survey briefly touched upon the issue of job loss resulting from the introduction of new technology, broadly defined. Respondents who had worked at any job or business between January 1984 and December 1989, and who reported the loss of a job in this period, were asked: "Why did this happen (mark all that apply): An employer going out of business? A plant closing? The introduction

of new technology? Reduction of staff? Seasonal job? Shortage of work? Other?" This chapter examines that sub-group who reported job loss due to the introduction of new technology.

Finally, the 1989 GSS probed concerns about future technologically induced job loss. Employed respondents were asked the following question: "Do you think it is likely you will lose your job or be laid off in the next year?" Those who responded "yes" were then asked: "Do you think this will be because of the introduction of computers or automated technology?"

Computer use was examined by industry and occupation. The classification schemes for industry and occupation already described in earlier chapters were used. In addition, a more detailed 34-category occupational classification was used to give a finer breakdown of on-the-job computer use. Furthermore, to accurately identify individuals in managerial and supervisory positions, employed respondents were asked: "Which of the following best describes the work you do? Is it managerial, supervisory or neither?" Respondents who indicated that their work was managerial were then asked: "Would you say that you are in a top, upper, middle or lower management position?"

The following analysis also considers the relationship between computer use and workers' evaluations of specific aspects of their jobs. Respondents whose main activity at the time of the survey was working at a job or business were asked whether they agreed strongly, agreed somewhat, disagreed somewhat, disagreed strongly, or had no opinion regarding the following statements about their current job: 1) "The physical surroundings are pleasant"; 2) "There is a lot of freedom to decide how to do your work"; 3) "You do the same things over and over"; 4) "Your job requires a high level of skill"; 5) The pay is good"; and 6) "Your chances for promotion or career development are good." These questions were similar to the job evaluation measures which have been used in other major surveys.¹⁰

5.4 RESULTS

5.4.1 Use of mainframes, personal computers and word processors on the job

Starting with the distribution of information-processing technology in the employed work force (Table 18), over one-third of those employed at the time of the survey (4.2 million individuals) reported using computers, such as mainframes, personal computers or processors in their job. Computer use varied markedly by age. Teenagers (aged 15-19) whose main activity was working at a job or business had the lowest level of computer use (13%). In

contrast, more than four in ten baby boomers (aged 25-44) used computers in their work.

As well, females had a higher level of computer use than males. Thirty-eight percent of females used computers in their work, compared with 32% of males. However, this difference resulted from females being concentrated in office jobs where automation was well advanced. Recall from Chapter 4 that in the adult population slightly more males than females reported knowing how to use a computer.

On-the-job computer use also showed substantial variations by province. Computer use on the job was considerably below the national average in Newfoundland, New

Brunswick and Saskatchewan. By contrast, 37% of the employed reported on-the-job computer use in Ontario, Alberta and British Columbia. This trend parallels the patterns of computer skills and home computer ownership noted in Chapter 4.

5.4.2 Variations in computer use by education and occupation

Text Table J shows that education was a factor in determining who did or did not use a computer at work. The higher the level of education, the greater the likelihood of working with a computer. Well over half (55%) of individuals with a university degree used computers at work, compared with 38% of individuals whose highest

TEXT TABLE J
Employed population 15 years of age and over by computer use on the job, sex and educational attainment, Canada, 1989

Sex and educational attainment	Total employed population		Use of computers on the job					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
Total	12,155	100	4,212	35	7,879	65	63	1
University degree ¹	2,248	100	1,236	55	1,004	45	—	—
Postsecondary diploma ²	2,874	100	1,149	40	1,718	60	—	—
High school diploma	3,672	100	1,384	38	2,265	62	—	—
Less than high school	3,260	100	419	13	2,816	86	25	1
Other ³	101	100	—	—	77	76	—	—
Not stated	—	—	—	—	—	—	—	—
Male								
Total	6,726	100	2,152	32	4,544	68	30	—
University degree ¹	1,332	100	776	58	553	41	—	—
Postsecondary diploma ²	1,529	100	596	39	932	61	—	—
High school diploma	1,819	100	550	30	1,256	69	—	—
Less than high school	1,982	100	219	11	1,751	88	—	—
Other ³	64	100	—	—	52	82	—	—
Not stated	—	—	—	—	—	—	—	—
Female								
Total	5,428	100	2,060	38	3,335	61	33	1
University degree ¹	916	100	460	50	451	49	—	—
Postsecondary diploma ²	1,345	100	553	41	786	58	—	—
High school diploma	1,853	100	834	45	1,009	54	—	—
Less than high school	1,278	100	200	16	1,064	83	—	—
Other ³	36	100	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—

General Social Survey, 1989

¹ Includes masters, earned doctorate, bachelor, undergraduate degree or teacher's college.

² Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

³ "Other" includes "No schooling".

level of education was a high school diploma and only 13% of individuals with less than high school. There were some obvious gender differences in this respect. In particular, males with university degrees were more likely than university-educated females to use computers on the job (58% compared with 50%). However, examining employed individuals whose highest level of education was a high school diploma showed that 45% of females, compared with 30% of males, used computers in their work.

The strong relationship between education and on-the-job computer use was largely a function of occupational differences in use. Two higher status white-collar occupations had extensive computer use (Table 19). Specifically, over three-quarters of individuals in science and engineering and 52% of managers and administrators used computers. Both of these occupations typically employed more males than females, required postsecondary education and had relatively high incomes. Only one other occupation, clerical, had a comparably high use level (55%). Clerical workers typically were females and often had a high school diploma as their highest level of education. Individuals employed in service and primary occupations were least likely to use computers (both around 10%).

In the three most computerized occupations, females were more extensive computer users than males. But this pattern was not consistent across all occupations. In teaching and social sciences, for example, substantially higher proportions of males (58% and 42%, respectively) used computers than females (37% and 33%, respectively).

Breaking down occupations more finely into 34 categories showed seven occupations in which 60% or more of employees reported using computers in their work (Text Table K). This identifies what the Economic Council of Canada referred to as high-tech occupations — jobs requiring either an in-depth knowledge of the principles and applications of technology or having a high technology content.¹¹ At this level of detail, around 90% of individuals in two occupations — life science, mathematics, systems analysis and related fields; and electronic data processing (EDP) equipment operators — worked with computers.

These seven high-tech occupations were clearly different, though, in educational requirements, intrinsic and extrinsic rewards, and advancement opportunities. Indeed, this juxtaposition of high-status (largely male) and low-status (largely female) occupations is striking. Alongside managers, administrators, engineers, architects and scientists were clerical and sales workers. In sum, computer use was most extensive at both ends of the white-collar occupational hierarchy.

5.4.3 Variations in computer use by industry

Table 20 outlines computer use by industry. The below-average computer use in agriculture and other primary industries, manufacturing, and construction mirrored the occupational trends just noted. Comparing these goods-producing industries, computers were most common in manufacturing. It must be kept in mind, however, that the 1989 GSS focused on information processing technology usually found in offices. As such, the GSS did not tap the full extent of automation in the goods-producing sector of the economy.

Clearly, the service industries, notably finance, business services and public administration, lead the way in workplace automation. This is not surprising, given findings from the Economic Council's study¹² and the wording of the 1989 GSS question on technology use, which was slanted towards service-sector applications. Three out of four financial industry employees (518,000 individuals) worked with computers. Close to half the employees in business services and public administration also used computers. The relatively high rate of computer usage in transportation and communication reflected the reliance of communications firms on sophisticated technologies. The huge volumes of information processed by these industries required large numbers of clerks (most of whom were females)¹³, who were numerically the largest single group of computers users, hence their high levels of computer use.

5.4.4 Employment characteristics associated with workplace computer use

The occupational and industrial distribution of mainframe computers, personal computers or word processors gave only a partial picture of computer use patterns. Therefore, the characteristics of jobs which were associated with computer use must be examined.

Figure S documents the relationship between use of computers on the job and five employment characteristics: seniority, employment status, part-time or full-time job, size of employer and promotions. Computer use varied little by seniority, with 32% of those having had less than four years of seniority in their job using a computer, compared with 38% of those having had 10 or more years. Employees in permanent jobs were much more likely to use computers than workers doing temporary, casual or seasonal work (36% compared with 24%). Relatively few (18%) self-employed individuals used computers in their work. Proportionately more full-time employees (38%) than part-time employees (17%) used computers. Among large employers (500 or more staff) 48% of

TEXT TABLE K

Employed population 15 years of age and over by computer use on the job, sex and particular occupations with above average computer use on the job, Canada, 1989

Sex and occupation	Total employed population		Use of computers on the job					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
Total	2,219	100	1,624	73	589	27	—	—
EDP equipment operators ¹	165	100	154	93	—	—	—	—
Management and administration related	419	100	314	75	105	25	—	—
Life sciences, maths, systems analysts & related	319	100	280	88	39	12	—	—
Architects, engineers and related	284	100	198	70	86	30	—	—
Stenographic and typing	431	100	300	70	126	29	—	—
Library, file, correspondence, other clerical & related	334	100	201	60	131	39	—	—
Sales(in services and non-commodities)	268	100	178	66	90	34	—	—
Male								
Total	994	100	718	72	276	28	—	—
EDP equipment operators ¹	41	100	35	86	—	—	—	—
Management and administration related	224	100	177	79	47	21	—	—
Life sciences, maths, systems analysts & related	224	100	197	88	27	12	—	—
Architects, engineers and related	254	100	179	70	75	30	—	—
Stenographic and typing	—	—	—	—	—	—	—	—
Library, file, correspondence, other clerical & related	97	100	42	43	55	57	—	—
Sales(in services and non-commodities)	149	100	84	56	65	44	—	—
Female								
Total	1,225	100	906	74	313	26	—	—
EDP equipment operators ¹	124	100	119	95	—	—	—	—
Management and administration related	195	100	137	70	59	30	—	—
Life sciences, maths, systems analysts & related	94	100	83	88	—	—	—	—
Architects, engineers and related	30	100	—	—	—	—	—	—
Stenographic and typing	424	100	296	70	124	29	—	—
Library, file, correspondence, other clerical & related	237	100	159	67	76	32	—	—
Sales(in services and non-commodities)	119	100	94	79	26	21	—	—

¹ Excludes material recording, scheduling and distributing occupations.

General Social Survey, 1989

workers use computers, compared with 22% in small firms (employing less than 20).

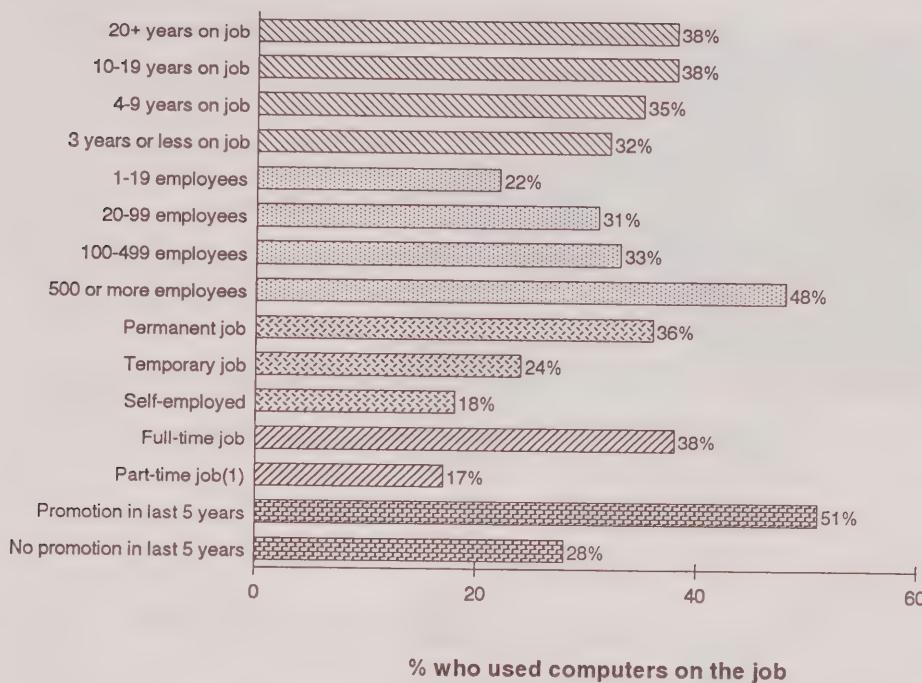
As already mentioned, managers and administrators were in the high-tech group of occupations. The 1989 GSS allowed for further probing of computer use among managers and supervisors (Figure T). Employed respondents were asked if their position was managerial or supervisory; those in management positions were further asked to indicate the level. Some 53% of respondents whose work was managerial used computers, in contrast to 31% among individuals whose jobs involved neither management or supervision. Within management ranks, computer use was highest in the middle and lower levels, 62% and 60% respectively. Computer use is much less pervasive among top (41%) and upper (51%) management.

In summary, jobs which were secure, full-time, middle and lower management, and in large organizations had significantly higher than average rates of computer use. This amplifies the Economic Council's recent distinction between good jobs and bad jobs in the service economy, showing that good jobs also were more computer-based.¹⁴ As further evidence, over half of those who had received a promotion in the previous five years used computers, compared with 28% of workers who had not been promoted (Figure S).

If satisfying, challenging and rewarding jobs are also more computerized than jobs lacking in these characteristics, then automation may be a factor in the polarization of employment rewards, which many analysts attribute to recent economic restructuring.¹⁵⁻¹⁷ How, though, does the

FIGURE S

Employed population 15 years of age and over by computer use on the job and selected characteristics, Canada, 1989



General Social Survey, 1989

(1) Individuals working less than 30 hours per week were defined as being employed in a part-time job.

introduction and use of computers actually contribute to the gap between good and bad jobs? How does computer use interact with the employment characteristics just discussed to reinforce the existing distribution of authority and rewards in the occupational structure? These are important questions, but they fall beyond the scope of the 1989 GSS.

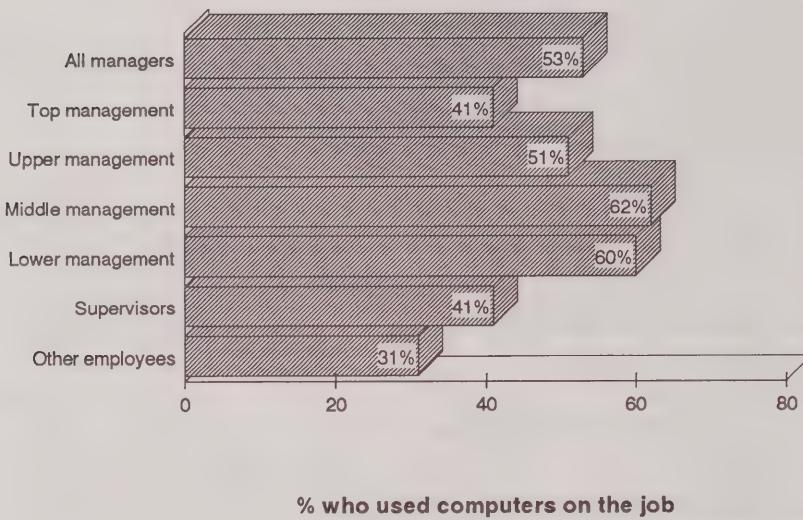
The 1989 GSS also asked workers to evaluate specific aspects of their jobs. On the whole, these self-reported job evaluations suggested that workers using computers did have better jobs (Figure U). Specifically, greater proportions of computer users agreed strongly or somewhat that their job required a high level of skill, provided a lot of decision-making freedom, paid well, and offered good promotion or

career prospects. Similarly, these same employees were far less likely than non-users to perform repetitive work. The only job characteristic that did not seem to vary by computer use was having pleasant physical surroundings. Differences in job satisfaction between users and non-users, while minor, also followed this same general pattern.

These results were not overwhelming. Yet they do suggest that within the labour force, using a mainframe computer, personal computer or word processor was associated with other job characteristics indicative of somewhat more challenging and rewarding work. However, this generalization should not overshadow the fact that within the group of high-tech occupations, identified above, there was considerable diversity in job rewards.

FIGURE T

Employed population 15 years of age and over who were managers or supervisors by computer use on the job, Canada, 1989



General Social Survey, 1989

5.4.5 Hours of on-the-job computer use

Computer users worked an average of 16.2 hours weekly on their machines (Text Table L). Females spent 3.3 hours more using computers than males, reflecting their predominance in clerical and other office jobs that were extensively automated. Across occupations, average weekly hours ranged from a low of about 8.0 in social sciences, teaching and primary occupations to over 20.0 in science and engineering and clerical occupations. The latter occupations also had large majorities of employees using computers.

In terms of industry, agriculture had very low weekly hours (4.6), compared with a high of 21.3 in business services. In the labour force generally, half the computer users operated their machines 11.0 hours or less weekly; 71% used them 20.0 hours or less (table not shown).

Based on a detailed 34-category occupational classification, four occupations had a weekly average of 20 or more hours of computer use. Life sciences, mathematics, systems analysis and related occupations typically required 26.2 hours of computer use weekly. Following a close second

were office machine and EDP operators, at 23.5 hours a week. Other jobs with 20.0 or more hours of use in a week were all within the clerical category (table not shown).

Undoubtedly many mathematicians and systems analysts, as well EDP equipment operators and other clerical workers, were very dependent on computers in their jobs. However, hours of computer use may mean different things depending on one's occupation. Further research into this issue will likely reveal significant variations in how, for example, the work time of systems analysts and data entry clerks is actually spent "on a computer."

5.4.6 Impact of computers or automated technology on work

The 1989 GSS also examined the impact of technological change on work. Individuals employed at the time of the survey were asked how much their work had been affected by the introduction of computers or automated technology in the last five years. It is important to note the wider focus here on computers or automated technology, compared to the narrower definition of technology used above to document computers use.

FIGURE U

Employed population 15 years of age and over by types of job evaluation and computer use on the job, Canada, 1989

Type of job evaluation



General Social Survey, 1989

(1) Includes the use of computers such as mainframes, personal computers and word processors in the job.

Text Table M documents that 29% of the employed (3.5 million individuals) reported that their work had been greatly affected by the introduction of computers or automated technology in the last five years. Another 15% (over 1.8 million) said that their work had been somewhat affected. Some 14% experienced a few effects, but the largest group — 41% of all employees or about 5 million individuals — encountered no effects at all.

Looking at the impact on major occupational groups, managerial and professional employees (38%) encountered the greatest changes due to technological change in the previous five years, followed by clerical, sales and service workers (29%). The impact was the least in blue-collar occupations (16%). In the managerial and professional

category, a substantially higher proportion of males (45%) than females (29%) reported that their work had been greatly affected by computers or automation. This no doubt reflects the male domination of management, science and engineering occupations, all of which experienced rapid technological changes in recent years.

There were some noteworthy provincial variations in the impact of computers and automation. Workers who were affected greatly or somewhat were more likely to live in Alberta, Nova Scotia, or British Columbia (table not shown). New Brunswick, Quebec, and Newfoundland had the highest proportions reporting that their work had not been affected at all by the introduction of computers or automation during the past five years.

TEXT TABLE L

Employed population 15 years of age and over who used computers on the job by average weekly hours of computer use on the job, sex and industry then occupation, Canada, 1989

Industry and occupation	Total employed population ¹		Average weekly hours of computer use			
	No.	Average	Male		Female	
			No.	Average	No.	Average
(Numbers in thousands)						
Industry						
All industries	4,161	16.2	2,123	14.6	2,038	17.9
Agriculture	39	4.6	36	4.9	—	—
Other primary	63	14.5	40	13.1	—	—
Manufacturing: non-durable goods	350	18.4	203	17.4	146	19.8
Manufacturing: durable goods	296	14.3	238	13.4	57	18.3
Construction	61	14.1	40	9.0	—	—
Transportation	432	18.4	264	16.3	168	21.7
Wholesale trade	161	16.4	98	16.0	63	17.1
Retail trade	395	14.3	174	14.2	222	14.3
Finance	515	18.0	156	17.3	360	18.3
Community services	731	13.5	269	12.1	462	14.4
Personal services	78	14.2	37	11.6	42	16.4
Business services	435	21.3	237	19.7	198	23.1
Public administration	545	14.6	301	11.0	243	19.2
Not stated	61	19.2	29	17.7	31	20.6
Occupation						
All occupations	4,161	16.2	2,123	14.6	2,038	17.9
Managerial/administration	989	14.6	626	13.4	364	16.6
Science/engineering	470	22.8	368	22.5	102	23.8
Social Science	129	8.3	76	8.0	53	8.8
Teaching	299	8.5	150	10.4	149	6.5
Medicine/health	141	12.7	41	10.7	100	13.5
Artistic/literary	97	18.4	53	17.3	44	19.7
Clerical	1,081	20.8	149	21.2	932	20.8
Sales	353	13.6	178	12.4	174	14.9
Service	138	12.2	100	10.0	38	18.0
Primary	45	8.2	44	8.3	—	—
Manufacturing/processing	197	13.2	181	11.5	—	—
Construction/transportation	105	11.8	85	10.7	—	—
Other occupations	81	16.0	48	11.4	32	23.0
Not stated	37	19.4	—	—	—	—

General Social Survey, 1989

¹ Employed persons who did not report hours of computer time are excluded.

A more detailed analysis identifies five occupations in which over 70% of employees reported no effects of automation (table not shown). Three of these were lower-level personal-service jobs (personal, apparel and furnishing services; food, beverage and related services; and food and beverage preparation and related lodging and accommodation services). The other two were in the goods-producing sector: jobs in wood, rubber and plastics manufacturing, which probably underwent automation prior to the 1980s; and textiles and clothing production, which remained labour-intensive and low-technology.

In contrast, occupations in life sciences, mathematics, systems analysis, clerical and those related to architecture and engineering reported the greatest impact of technological change. These occupations also had very high levels of computer use. On the whole, high-use levels in these occupations were likely associated with the fairly recent introduction of new technologies.

Employees using computers (mainframes, personal computers or word processors) in their job, compared to those who did not use computers, were far more likely to have experienced the impact of automation in the last five

TEXT TABLE M

Employed population 15 years of age and over by impact of introduction of computers or automated technology on work, major occupational groups and sex, Canada, 1989

Occupation and sex	Total employed population				Work affected by introduction of computers							
	Greatly		Somewhat		Hardly		Not at all		Not stated			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
All occupations												
Both sexes	12,155	100	3,500	29	1,832	15	1,759	14	4,974	41	89	1
Male	6,726	100	1,929	29	1,152	17	1,006	15	2,598	39	41	1
Female	5,428	100	1,571	29	680	13	753	14	2,376	44	48	1
Managerial/professional												
Both sexes	4,442	100	1,684	38	778	18	656	15	1,298	29	25	1
Male	2,450	100	1,102	45	467	19	310	13	553	23	—	—
Female	1,992	100	582	29	311	16	346	17	745	37	—	—
Clerical/sales/service												
Both sexes	4,401	100	1,284	29	562	13	589	13	1,927	44	39	1
Male	1,526	100	391	26	240	16	246	16	643	42	—	—
Female	2,876	100	893	31	322	11	343	12	1,284	45	34	1
Blue-collar												
Both sexes	3,217	100	506	16	486	15	486	15	1,718	53	—	—
Male	2,691	100	420	16	440	16	433	16	1,382	51	—	—
Female	526	100	85	16	46	9	53	10	336	64	—	—
Not stated												
Both sexes	94	100	26	28	—	—	27	29	31	32	—	—
Male	60	100	—	—	—	—	—	—	—	—	—	—
Female	35	100	—	—	—	—	—	—	—	—	—	—

General Social Survey, 1989

years (table not shown). Among computer users, 63% had been greatly affected in their work by the introduction of computers or automated technology. Interestingly, an almost identical proportion (60%) of employees not using computers reported no effects of technological change. Only one in ten of non-users said they had been greatly affected. The most obvious explanation for this was that the 1989 GSS question on computer use was restricted to basic office technologies, whereas the impact of computers was measured in more general terms.

5.4.7 Impact of computers and automation on job skills

A central issue in debates about the impact of technological change is skill requirements. Analysts offering a critical perspective on technology claim it tends to deskill work.¹⁸⁻¹⁹ Yet a growing body of research refutes such technological determinism, arguing instead that technology

has the potential to upgrade skill requirements, depending on how work is reorganized.²⁰

Workers whose jobs had been greatly or somewhat affected by technological change during the 1984-1989 period were asked the impact of this on the skills required to perform their work. Over two-thirds of this group said that computers and automation had resulted in increased skills (Text Table N). Almost none (2%) reported a decrease in skill level, whereas 30% experienced no effect on skills due to computers or automation.

In terms of major occupational groups, individuals employed in managerial and professional jobs (70%) were more likely to have experienced an increase in skills than individuals in clerical, sales and service jobs (67%) or in blue-collar jobs (64%). The only gender differences worth mentioning concerned the greater impact reported by females in clerical, sales and service jobs.

TEXT TABLE N

Employed population 15 years of age and over whose work was affected by introduction of computers or automated technology by major occupational groups, sex and level of skill required to perform jobs then job security then extent to which work was interesting, Canada, 1989

Selected characteristics	Total employed population						Major occupational groups					
							Managerial/professional					
	Both sexes		Male		Female		Both sexes		Male		Female	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Skill required												
Total	5,332	100	3,081	100	2,251	100	2,463	100	1,569	100	893	100
Increased	3,624	68	2,052	67	1,572	70	1,731	70	1,115	71	615	69
Decreased	112	2	50	2	62	3	47	2	—	—	31	3
Stayed the same	1,586	30	971	31	615	27	679	28	434	28	245	27
Not stated	—	—	—	—	—	—	—	—	—	—	—	—
Job security												
Total	5,332	100	3,081	100	2,251	100	2,463	100	1,569	100	893	100
Increased	1,024	19	632	21	392	17	479	19	343	22	136	15
Decreased	579	11	360	12	219	10	205	8	130	8	75	8
Stayed the same	3,683	69	2,071	67	1,611	72	1,748	71	1,084	69	664	74
Not stated	47	1	—	—	29	1	31	1	—	—	—	—
Effect on work												
Total	5,332	100	3,081	100	2,251	100	2,463	100	1,569	100	893	100
More interesting	3,262	61	1,892	61	1,370	61	1,631	66	1,079	69	552	62
Less interesting	212	4	110	4	102	5	77	3	33	2	44	5
Stayed the same	1,843	35	1,070	35	773	34	748	30	454	29	294	33
Not stated	—	—	—	—	—	—	—	—	—	—	—	—

Using a 34-category occupational classification, jobs in mathematics, systems analysis, physical and life science, and mechanical repairs experienced the greatest increases in skill levels (table not shown). About four in every five workers in these occupations reported a great increase in their job skills. Just over two-thirds of workers in two clerical jobs (office machine and EDP operators, stenographers and typists) reported a similar positive impact on their skills. Not only do these individuals use computers extensively, as observed above, but the technological innovations had also contributed to an upgrading of their skills.

The impact of computers on skill also varied by education and age (Figure V). Those who experienced skill upgrading due to automation tended to be relatively well educated. While 58% of workers with less than a high school diploma reported skill increases, fully 72% of those with a postsecondary diploma or certificate reported skill increases. Among males, the 35-44 age cohort reported the greatest skill increases, whereas among females the skill

improvements were most evident in the 25-34 age group. Male teenage workers were the least likely to have experienced skill upgrading due to automation.

Three-quarters of on-the-job computer users reported increased skill requirements (Figure V). But so did just over half of those not using computers in their work. This discrepancy may have resulted from the wording of the 1989 GSS questions on computer use and impact. Another possibility is that these individuals may have used computers at some point in the past five years and associated skill increases with this. Equally plausible, the reorganization of work that sometimes accompanies automation may have indirectly increased skill requirements for some employees.²¹

Nor should the possibility of a positive bias toward new technology be ruled out. Given the receptive attitudes of Canadians towards technology, documented in Chapter 4, it may be the case that even those workers not directly affected by workplace automation may view the changes

TEXT TABLE N

Employed population 15 years of age and over whose work was affected by introduction of computers or automated technology by major occupational groups, sex and level of skill required to perform jobs then job security then extent to which work was interesting, Canada, 1989 — concluded

Selected characteristics	Major occupational groups											
	Clerical/sales/service											
	Both sexes		Male		Female		Both sexes		Male		Female	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)												
Skill required												
Total	1,846	100	631	100	1,214	100	992	100	860	100	132	100
Increased	1,235	67	377	60	858	71	633	64	546	63	87	66
Decreased	42	2	—	—	27	2	—	—	—	—	—	—
Stayed the same	567	31	239	38	328	27	333	34	291	34	42	32
Not stated	—	—	—	—	—	—	—	—	—	—	—	—
Job security												
Total	1,846	100	631	100	1,214	100	992	100	860	100	132	100
Increased	344	19	127	20	217	18	184	19	153	18	30	23
Decreased	198	11	69	11	129	11	174	18	159	19	—	—
Stayed the same	1,293	70	435	69	858	71	628	63	542	63	86	65
Not stated	—	—	—	—	—	—	—	—	—	—	—	—
Effect on work												
Total	1,846	100	631	100	1,214	100	992	100	860	100	132	100
More interesting	1,088	59	345	55	743	61	529	53	458	53	71	54
Less interesting	92	5	42	7	50	4	42	4	34	4	—	—
Stayed the same	661	36	244	39	417	34	417	42	364	42	53	40
Not stated	—	—	—	—	—	—	—	—	—	—	—	—

"Not stated" category of major occupational groups study has been omitted from table but numbers are included in calculation of totals and percentages.

General Social Survey, 1989

in a positive light. All these hypotheses demand further investigation.

5.4.8 Impact of computers and automation on job security and intrinsic interest

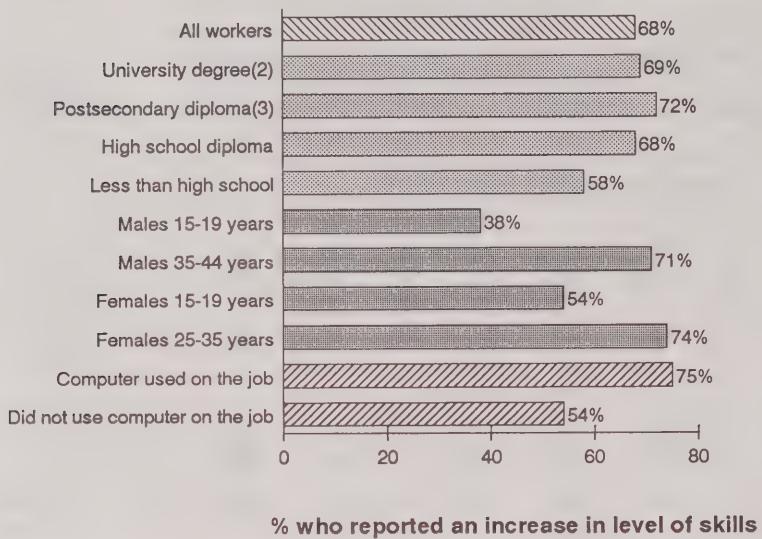
Looking at Text Table N, 69% of the employed whose jobs had been affected by technology stated there was no change in their job security. Another 19% benefitted from an increase in job security. Males reported somewhat greater benefits than females but there were no occupational differences in this regard. Only 11% reported decreased job security. Male blue-collar workers were somewhat more likely to have experienced a decrease in job security due to automation than employees in managerial and professional, or in clerical, sales and service occupations.

Before jumping to the conclusion that automation in Canadian workplaces during the second half of the 1980s had little effect on job security, it must be pointed out that only employed individuals answered these questions. Thus, anyone who had lost a job due to technological change and was unemployed at the time of the survey was excluded. Still, those people whose main activity was working at a job or business showed little concern that new technologies undermined their job security.

Text Table N clearly shows that the impact of automation on the intrinsic interest of work, as with skill, was generally positive. Fully 61% of the employees affected by automation reported that it had made their work more interesting. While 4% reported that their work had become less interesting due to technological changes, it is important

FIGURE V

Employed(1) population 15 years of age and over by impact of automation on job skills in the last five years and selected characteristics, Canada, 1989



General Social Survey, 1989

(1) Includes only the employed population whose work had been "greatly" or "somewhat" affected by the introduction of computers or automated technology in the last five years.

(2) Includes masters, earned doctorate, bachelor or undergraduate degree, or teacher's college.

(3) Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

to note that this included 212,000 Canadians. Text Table N reveals that individuals in managerial and professional occupations were more likely to say that their work had become more interesting (66%), while blue-collar workers were least likely (53%).

Comparing males and females, a higher proportion of males in managerial and professional occupations reported increased intrinsic interest. Yet the reverse held true for clerical, sales and service jobs. This follows the same pattern observed for skill increases.

5.4.9 Technological change and job loss

The 1989 GSS also touched briefly on the issue of technologically induced job loss. While results were informative at a general level, above all they point to the need for a more comprehensive investigation of this aspect of technological change.

Anyone who had lost a job during the 1984-1989 period was asked the reason. Of the 1.4 million individuals who reported a job loss in those five years and whose main activity at the time of the survey was working at a job or business, so few cited the introduction of new technology as a reason that reliable estimates cannot be provided. It must be recognized, however, that the causes of job loss were often numerous and complex. Thus, some workers may not have known all the factors responsible for their job loss. Still, the impact of new technology seemed minor (table not shown).

Another 802,000 workers (almost 7% of those employed at the time of the survey) expected to be laid off or lose their job in the next year for any reason. Of these, only 9% (72,000) thought this would be a result of the introduction of computers or automated technology. In the Canadian labour force, fears about being future victims of advancing technology were negligible, at least in early 1989.

This is not to downplay the negative personal consequences this may have had for those 72,000 individuals who anticipated technological redundancy in 1989-90. Indeed, this number is equivalent to literally dozens of Canada's largest factories, stores or offices closing their doors for good. Viewed from this perspective, the GSS findings do not contradict the negative impact on employment levels found in case studies of technological change in specific firms.²²

5.5 DISCUSSION

One in three employees used a mainframe computer, personal computer, or a word processor at work for an average of about 16.2 hours a week. Proportionally more women than men were computer users. Better-educated workers and those in the baby-boom generation also had levels of computer use above the labour force average.

In venturing any conclusions from the 1989 GSS, one must be careful to bear in mind limitations imposed by the different definitions of automation used in the survey. Equally important is the need to recognize the latitude possible in respondents' interpretations of the GSS technology-related questions.

The profile of computer users included a combination of employment conditions and specific job characteristics typically associated with good jobs.²³⁻²⁴ Corroborating this positive image of automation was the finding that the most technologically intensive jobs were at the upper levels of the occupational hierarchy. But lower-level white-collar jobs, such as predominantly female clerical occupations, also appeared to have gained some benefits from automation. This was especially true with regard to increased skill requirements and intrinsic interest.

More research is required, however, to explore how computerized work is associated with various job rewards and opportunities. It would also be very useful to systematically study how workers perceive technological change. Most contentious in this respect is the issue of skill. For example, automation may appear to workers to be upgrading skills because of the need to learn new things, even though objective measures of job skills before and after technological change may point to a decline.²⁵

In 1985, the Economic Council of Canada estimated that 13% of the work force used new automated technologies directly in their work.²⁶ On the basis of this, the 1989 GSS documented a remarkable increase in computer use in the second half of the 1980s.

It is also interesting to compare these GSS findings with workplace computer use patterns in the United States. Data from the October 1989 United States' Current Population Survey documented that 36.8% of employed individuals aged 18 and over used a computer (personal or home computer, mini-computer, or mainframe computer) in their job.²⁷ Thus, the prevalence of computer use in the workplace was only slightly higher in the United States than in Canada. Most of this cross-national difference was due to proportionally more females in the United States than in Canada using computers at work; among males, there was no difference between the two countries. Variations in the United States' workplace computer use mirrored Canadian patterns, with highest use levels found among employees with postsecondary education and in managerial and professional occupations.

The experiences of employed Canadians with the recent and rapid introduction of new technologies in the workplace do not fit the gloomy scenarios of widespread deskilling and job loss. However, given the concentration of computers in a relatively small number of good jobs, it is entirely possible that technological change is increasing the polarization between good and bad jobs in the labour market.

Workplace automation also has an important human capital dimension. Recall that about half of adult Canadians could operate a computer, with the vast majority of these users able to do more than just play computer games. Is this relatively extensive computer literacy being utilized in the workplace? The answer is no. Only about 56% of individuals in the labour force who had the ability to use computers actually used one in their job. Clearly, not all jobs can be computerized. Even so, a fuller utilization of untapped human resources could accelerate the pace of the micro-electronics revolution. Based on 1989 GSS evidence, this advancing automation has the potential to upgrade the content of jobs.

NOTES

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10. Comparable questions have been asked in the following United States and Canadian national surveys: United States' Quality of Employment Survey (1977), Institute for Social Research, University of Michigan; Job Satisfaction and Work Ethic Surveys (1973-74), Canada Manpower and Immigration, Strategic Planning and Research; Social Change in Canada/ Quality of Life in Canada (1977, 1979, 1981), Institute for Behavioural Research, York University.
11. Economic Council of Canada, op cit, p. 39.
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TABLE 18

Employed population 15 years of age and over by computer use on the job, sex and age group then province, Canada, 1989

Sex and age group then province	Total employed population		Use of computers on the job					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All age groups	12,155	100	4,212	35	7,879	65	63	1
15-19	788	100	101	13	676	86	—	—
20-24	1,353	100	407	30	944	70	—	—
25-34	3,566	100	1,465	41	2,091	59	—	—
35-44	3,116	100	1,318	42	1,791	57	—	—
45-54	2,013	100	652	32	1,340	67	—	—
55-64	1,136	100	261	23	870	77	—	—
65+	182	100	—	—	168	92	—	—
Male								
All age groups	6,726	100	2,152	32	4,544	68	30	—
15-19	403	100	52	13	346	86	—	—
20-24	686	100	167	24	519	76	—	—
25-34	1,975	100	734	37	1,241	63	—	—
35-44	1,725	100	699	41	1,023	59	—	—
45-54	1,135	100	345	30	776	68	—	—
55-64	693	100	152	22	538	78	—	—
65+	110	100	—	—	101	92	—	—
Female								
All age groups	5,428	100	2,060	38	3,335	61	33	1
15-19	386	100	49	13	329	85	—	—
20-24	667	100	240	36	425	64	—	—
25-34	1,591	100	731	46	850	53	—	—
35-44	1,390	100	618	44	769	55	—	—
45-54	879	100	306	35	564	64	—	—
55-64	442	100	110	25	332	75	—	—
65+	73	100	—	—	67	92	—	—
Province								
Canada	12,155	100	4,212	35	7,879	65	63	1
Newfoundland	166	100	48	29	118	71	—	—
Prince Edward Island	44	100	—	—	34	76	—	—
Nova Scotia	393	100	132	34	261	66	—	—
New Brunswick	301	100	85	28	216	72	—	—
Quebec	2,980	100	940	32	2,024	68	—	—
Ontario	4,802	100	1,785	37	2,994	62	—	—
Manitoba	499	100	163	33	336	67	—	—
Saskatchewan	431	100	107	25	320	74	—	—
Alberta	1,154	100	426	37	727	63	—	—
British Columbia	1,385	100	515	37	850	61	—	—

General Social Survey, 1989

TABLE 19

Employed population 15 years of age and over by computer use on the job, sex and occupation,
Canada, 1989

Sex and occupation	Total employed population		Use of computers on the job					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All occupations	12,155	100	4,212	35	7,879	65	63	1
Managerial/administration	1,919	100	995	52	909	47	—	—
Science/engineering	602	100	478	79	125	21	—	—
Social science	338	100	129	38	207	61	—	—
Teaching	681	100	308	45	373	55	—	—
Medicine/health	638	100	141	22	497	78	—	—
Artistic/literary	264	100	98	37	166	63	—	—
Clerical	1,975	100	1,088	55	874	44	—	—
Sales	1,032	100	354	34	667	65	—	—
Service	1,394	100	138	10	1,253	90	—	—
Primary	419	100	45	11	370	88	—	—
Manufacturing/processing	1,409	100	197	14	1,198	85	—	—
Construction/transportation	953	100	113	12	840	88	—	—
Other occupations	436	100	88	20	348	80	—	—
Not stated	94	100	39	42	54	57	—	—
Male								
All occupations	6,726	100	2,152	32	4,544	68	30	—
Managerial/administration	1,243	100	629	51	602	48	—	—
Science/engineering	478	100	375	79	102	21	—	—
Social science	179	100	76	42	104	58	—	—
Teaching	269	100	156	58	112	42	—	—
Medicine/health	153	100	41	27	111	73	—	—
Artistic/literary	128	100	53	41	75	59	—	—
Clerical	419	100	150	36	268	64	—	—
Sales	522	100	178	34	338	65	—	—
Service	585	100	100	17	485	83	—	—
Primary	352	100	44	13	304	87	—	—
Manufacturing/processing	1,121	100	181	16	931	83	—	—
Construction/transportation	891	100	94	11	797	89	—	—
Other occupations	327	100	48	15	279	85	—	—
Not stated	60	100	25	42	34	58	—	—
Female								
All occupations	5,428	100	2,060	38	3,335	61	33	1
Managerial/administration	675	100	366	54	307	45	—	—
Science/engineering	125	100	102	82	—	—	—	—
Social science	159	100	53	33	103	65	—	—
Teaching	412	100	152	37	260	63	—	—
Medicine/health	486	100	100	21	386	79	—	—
Artistic/literary	135	100	45	33	90	67	—	—
Clerical	1,556	100	938	60	606	39	—	—
Sales	510	100	176	34	328	64	—	—
Service	809	100	38	5	768	95	—	—
Primary	67	100	—	—	66	99	—	—
Manufacturing/processing	287	100	—	—	266	93	—	—
Construction/transportation	63	100	—	—	43	69	—	—
Other occupations	109	100	40	37	69	63	—	—
Not stated	35	100	—	—	—	—	—	—

General Social Survey, 1989

TABLE 20

Employed population 15 years of age and over by computer use on the job, sex and industry,
Canada, 1989

Sex and industry	Total employed population		Use of computers on the job					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All industries	12,155	100	4,212	35	7,879	65	63	1
Agriculture	294	100	39	13	252	86	—	—
Other primary	192	100	63	33	129	67	—	—
Manufacturing: non-durable goods	1,153	100	357	31	788	68	—	—
Manufacturing: durable goods	977	100	296	30	672	69	—	—
Construction	541	100	61	11	480	89	—	—
Transportation	975	100	442	45	533	55	—	—
Wholesale trade	449	100	162	36	287	64	—	—
Retail trade	1,634	100	399	24	1,212	74	—	—
Finance	694	100	518	75	176	25	—	—
Community services	2,182	100	748	34	1,421	65	—	—
Personal services	920	100	80	9	837	91	—	—
Business services	884	100	435	49	449	51	—	—
Public administration	1,100	100	549	50	549	50	—	—
Not stated	160	100	63	40	95	60	—	—
Male								
All industries	6,726	100	2,152	32	4,544	68	30	—
Agriculture	233	100	36	15	194	83	—	—
Other primary	161	100	40	25	120	75	—	—
Manufacturing: non-durable goods	720	100	208	29	509	71	—	—
Manufacturing: durable goods	831	100	238	29	583	70	—	—
Construction	479	100	40	8	439	92	—	—
Transportation	720	100	273	38	447	62	—	—
Wholesale trade	326	100	100	31	226	69	—	—
Retail trade	724	100	174	24	541	75	—	—
Finance	239	100	156	65	83	35	—	—
Community services	701	100	276	39	420	60	—	—
Personal services	318	100	37	12	282	88	—	—
Business services	517	100	237	46	281	54	—	—
Public administration	667	100	306	46	361	54	—	—
Not stated	91	100	32	35	59	65	—	—
Female								
All industries	5,428	100	2,060	38	3,335	61	33	1
Agriculture	61	100	—	—	58	95	—	—
Other primary	31	100	—	—	—	—	—	—
Manufacturing: non-durable goods	434	100	150	35	279	64	—	—
Manufacturing: durable goods	146	100	57	39	89	61	—	—
Construction	62	100	—	—	41	67	—	—
Transportation	255	100	169	66	86	34	—	—
Wholesale trade	123	100	63	51	61	49	—	—
Retail trade	911	100	225	25	671	74	—	—
Finance	455	100	362	79	93	21	—	—
Community services	1,481	100	472	32	1,001	68	—	—
Personal services	601	100	43	7	555	92	—	—
Business services	366	100	198	54	168	46	—	—
Public administration	432	100	243	56	188	43	—	—
Not stated	69	100	31	46	36	53	—	—

General Social Survey, 1989

CHAPTER 6

RETIREMENT

This chapter examines important aspects of retirement: attitudes towards mandatory retirement; retirement plans; and, among the retired population, reasons for retirement, pensions and quality of life.

6.1 HIGHLIGHTS

- In 1989, only one in three employed Canadians supported the idea of mandatory retirement, with 60% of these individuals believing that the age should be less than 65.
- Among the employed, 43% intended to retire before age 65, whereas 34% had no planned retirement age and 14% planned to retire at age 65.
- 55% of employed males and 49% of employed females were provided with a pension plan by their business or company.
- Almost two-thirds (63%) of the currently retired population did so before age 65, while only 17% retired at age 65.
- Only 28% of the formerly employed retired because they had reached mandatory retirement age. Health reasons were an equally important cause of retirement cited by 27%.
- Three in five retired males received pension benefits from a former employer, compared with less than three in ten retired females.
- 43% of retirees enjoyed life more after retiring than before and 17% enjoyed retired life less.
- The employed and students were more satisfied with their health and their education than were the retired, but the retired were more satisfied with their finances.
- 86% of retirees were satisfied with their retirement.

6.2 INTRODUCTION

The Canadian population is aging. A clear indication of this seniors boom is the relative growth of the 65 and over age group. Now just over one in ten Canadians is aged 65 and over. By 2031, this figure is projected to rise to about one in four individuals.¹⁻² The rapid expansion of the elderly population is linked to the aging of the huge baby-boom generation.³⁻⁴ As this generation grows older, Canada will face numerous challenges. For instance, how will Canadians provide adequate financial and social support for the growing elderly population? And will the seniors' boom trigger changes in work and education patterns whereby the elderly opt for various combinations of leisure, employment and education?

Clearly the social implications of population aging are enormous and complex.⁵⁻⁸ The purpose of this chapter is to contribute to an informed discussion of these implications by examining the views of Canadians towards mandatory retirement as well as their retirement plans. The chapter also focuses on the retired population, investigating reasons for retirement, pensions and quality of life.

6.3 METHODS

The 1989 GSS asked all respondents two questions concerning their own retirement plans and their opinion about mandatory retirement. First, all respondents were asked: "At what age do you plan to retire?" The actual age was recorded, as were "don't know" and "don't intend to retire" responses. Second, all respondents were asked: "Do you think that mandatory retirement is a good idea?" Possible responses were "yes" or "no", with those answering yes asked to state an age for mandatory retirement. Furthermore, respondents whose main activity at the time

of the survey was working at a job or business were asked if their business/company provides them with a pension plan (possible responses: "yes", "no" and "don't know").

For the purposes of this chapter, the retired population was defined as those individuals who, during the week prior to the survey, reported retired as their main activity (as opposed to working at a job or business, looking for work, student or keeping house) and who had ever worked at a job or business. These retired individuals were then asked a sequence of questions regarding their employment history, reason for retirement, pension and quality of life in retirement.

Specifically, retired individuals were asked four basic questions: 1) Year in which they retired; 2) Occupation ("What kind of work were you doing?") at the time of retirement; 3) Whether or not the respondent retired because she or he had reached mandatory retirement age, and if not, whether the individual retired because her or his employer offered an early retirement incentive, because new technology was introduced, because their health required it, or any other reason; and 4) Satisfaction with retirement (coded the same as the satisfaction measures discussed in previous chapters: "very satisfied", "somewhat satisfied", "somewhat dissatisfied", "very dissatisfied" and "no opinion"). The analysis below combines the "very satisfied" and "somewhat satisfied" responses into a single satisfied category.

In terms of pensions, respondents were asked whether or not they received pension or retirement benefits from any of their former employers. If the respondent reported receiving pension or retirement benefits from a former employer, the respondent was asked if these were adjusted for changes in the cost of living.

Satisfaction with retirement was measured by asking: "Compared to the year before you retired, do you now enjoy life more, less or about the same?" Respondents reporting that they enjoy life more now were asked: "What is the main reason that you now enjoy life more? Is it...more leisure time; more travel; more time with family; more time for voluntary activities; or other?" Respondents reporting that they enjoy life less now were asked: "What is the main reason that you now enjoy life less? Is it...your health; decrease in income; less contact with people; or other?"

6.4 RESULTS

6.4.1 Attitudes towards mandatory retirement

Canada, like other industrialized nations, has evolved a three-phase adult life-cycle: education, employment, then

retirement. During the 1950s, Canada introduced an old age income security system and, in 1966, the Canada/ Quebec Pension Plans. Employer-sponsored pension plans also developed during this period. Because these public and private pensions started paying benefits at age 65, this became defined as the age of retirement.⁹

Yet growing numbers of elderly Canadians were beginning to oppose mandatory retirement at age 65 on the grounds that they would prefer to work beyond this age. Others may oppose mandatory retirement on human rights grounds, viewing it as a form of age discrimination. Public debate about mandatory retirement is heating up, especially in the wake of the recent Supreme Court decision which backs the principle.¹⁰⁻¹⁴ Many people may see employment beyond age 65 as a financial necessity because of inadequate pensions.¹⁵ Other trends, such as multiple careers, early retirement, gradual retirement, and post-retirement reemployment are also eroding the conventional practice of working until age 65 and then abruptly entering the retirement phase of one's life.¹⁶⁻¹⁷ These public policy discussions can benefit from a better understanding of how Canadians view mandatory retirement and when they plan to retire themselves.

As Text Table O indicates, only 35% of Canadians (over 7 million individuals) supported the idea of mandatory retirement. This varied from about 30% in Alberta, Ontario and British Columbia to 45% in Manitoba and 56% in Newfoundland. These provincial differences were more pronounced than differences in support for mandatory retirement across age groups. Males were slightly more supportive of mandatory retirement than females (Text Table P).

Further analysis, summarized in Figure W, shows that attitudes towards mandatory retirement were influenced by level of education, household income, main activity and access to a pension plan. A negative relationship was observed between socio-economic status, as measured by education and income, and support for mandatory retirement. That is, the higher one's level of education or household income, the less likely the individual was to endorse mandatory retirement.

To speculate on the underlying reasons for this relationship, it may reflect the link between the support for mandatory retirement, on one hand, and receiving pension benefits and job security until age 65, on the other. While individuals with low levels of education and income undoubtedly aspire to a secure job with a pension, those with high levels of education and income probably already had these — and therefore, the resources to change jobs or leave the labour force altogether before age 65.

TEXT TABLE O

Population 15 years of age and over by province, age group and attitudes towards mandatory retirement, Canada, 1989

Age group and mandatory retirement is a good idea	Total population				Province						
	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick		Quebec		
	No.	%	No.	%	No.	%	No.	%	No.	%	
No. in thousands											
All age groups											
Total	20,248	100	427	100	98	100	690	100	551	100	5,231
Yes	7,188	35	238	56	33	34	258	37	231	42	2,177
No	12,582	62	185	43	62	63	415	60	291	53	2,954
Not stated	478	2	—	—	—	—	—	—	29	5	101
15-24											
Total	3,913	100	106	100	—	—	142	100	117	100	965
Yes	1,312	34	54	51	—	—	34	24	57	49	410
No	2,517	64	51	49	—	—	105	74	54	46	539
Not stated	83	2	—	—	—	—	—	—	—	—	—
25-44											
Total	8,601	100	179	100	40	100	284	100	220	100	2,272
Yes	2,957	34	103	58	—	—	117	41	87	39	935
No	5,502	64	73	41	—	—	157	55	128	58	1,308
Not stated	142	2	—	—	—	—	—	—	—	—	30
45+											
Total	7,734	100	142	100	37	100	263	100	214	100	1,994
Yes	2,919	38	80	56	—	—	107	40	88	41	832
No	4,563	59	60	42	—	—	152	58	108	51	1,107
Not stated	252	3	—	—	—	—	—	—	—	—	56

However, this line of argument is not entirely consistent with another finding in Figure W: employed individuals with company-sponsored pension plans, compared with workers who did not have pension plans, tended to be slightly more supportive of mandatory retirement. The fact that pension benefits were linked to a mandatory retirement age likely accounted for this finding.

Furthermore, individuals who were retired or keeping house were generally more favourable toward mandatory retirement than were students and the employed. A thorough examination of these and other possible determinants of attitudes towards mandatory retirement falls beyond the scope of the 1989 GSS.

Looking only at individuals working at a job or business, some variations by occupation were observed (Table 21). On one hand, 46% of workers in manufacturing and processing, and 41% of those employed in construction and transportation supported mandatory retirement. On the other hand, 19% of those employed in social sciences,

20% in artistic and literary jobs, and 24% in teaching held this view. In several occupations, there were notable gender differences. For instance, 28% of male teachers and sales workers supported mandatory retirement, compared with about 20% of females in these two occupations.

6.4.2 Suggested age for mandatory retirement

Certainly part of the explanation for the above variations in attitudes toward mandatory retirement was the lack of consensus regarding the ideal age for mandatory retirement. Among those employees who agreed in principle with mandatory retirement, 60% believed that the age should be 64 years or less, while 37% felt at age 65 (Table 22). Very few (2%) believed that mandatory retirement should be set beyond age 65.

It is also evident from Table 22 that age influenced views about the ideal mandatory retirement age. Workers in the younger (15-24) and older (55 and over) age groups were

TEXT TABLE O

Population 15 years of age and over by province, age group and attitudes towards mandatory retirement, Canada, 1989 — concluded

Age group and mandatory retirement is a good idea	Province									
	Ontario		Manitoba		Saskatchewan		Alberta		British Columbia	
	No.	%	No.	%	No.	%	No.	%	No.	%
No. in thousands										
All age groups										
Total	7,469	100	829	100	749	100	1,823	100	2,381	100
Yes	2,308	31	370	45	296	40	535	29	743	31
No	4,997	67	426	51	438	59	1,266	69	1,548	65
Not stated	164	2	33	4	—	—	—	—	91	4
15-24										
Total	1,439	100	167	100	149	100	381	100	426	100
Yes	383	27	68	41	66	44	114	30	119	28
No	1,043	72	95	57	82	55	262	69	271	64
Not stated	—	—	—	—	—	—	—	—	36	9
25-44										
Total	3,135	100	337	100	298	100	845	100	991	100
Yes	931	30	135	40	110	37	234	28	290	29
No	2,147	68	189	56	183	61	606	72	686	69
Not stated	57	2	—	—	—	—	—	—	—	—
45 +										
Total	2,896	100	325	100	302	100	598	100	963	100
Yes	993	34	167	51	120	40	186	31	334	35
No	1,808	62	142	44	173	57	398	67	591	61
Not stated	94	3	—	—	—	—	—	—	39	4

General Social Survey, 1989

most favourable to 65 being the age for mandatory retirement (43% and 50%, respectively, compared with 34% for the two other age groups). Table 22 also indicates that baby boomers (aged 25-44 years), in comparison with other age groups, were more favourable to having retirement mandatory at an age less than 65. Similarly, more than 60% of the 25-44 cohort who supported mandatory retirement thought that the age for this should be less than 65.

Furthermore, an individual's view of the ideal mandatory retirement age varied depending on their education, income, main activity and inclusion in a pension plan. Having a university degree or a high household income was associated with a preferred retirement age of 65, rather than earlier. This was consistent with the patterns already noted with regard to support for mandatory retirement. Individuals who participated in employer-sponsored pension plans were slightly less supportive of 65 as the mandatory age for retirement. Generally, it is difficult to discern any solid trends in these data.

Another way of looking at attitudes about mandatory retirement is in terms of retirement plans. Not unexpectedly, support for mandatory retirement at less than age 65 was highest among those actually planning to retire before age 65 (table not shown).

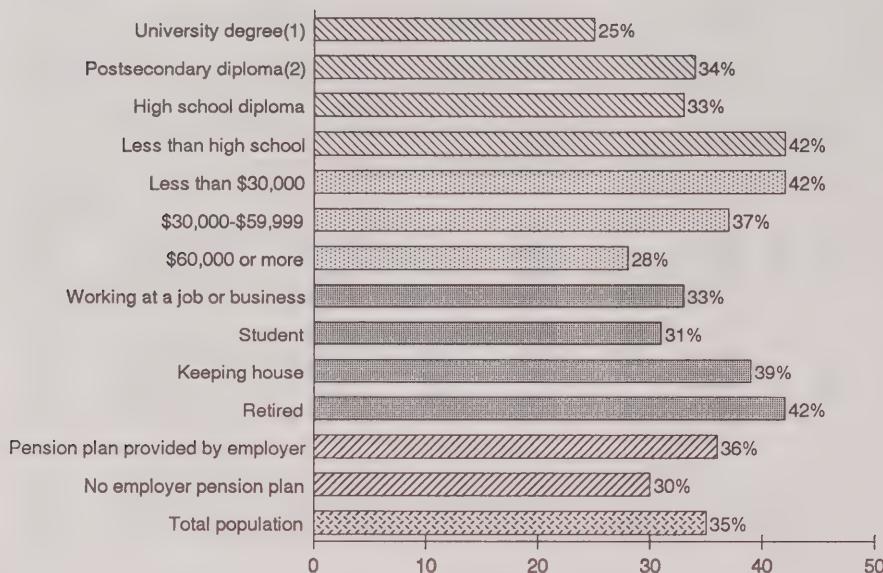
In sum, a large majority of employed Canadians were opposed to the idea of mandatory retirement. And even among those in favour of mandatory retirement, the majority would have liked this age to be less than 65.

6.4.3 Retirement plans of the employed

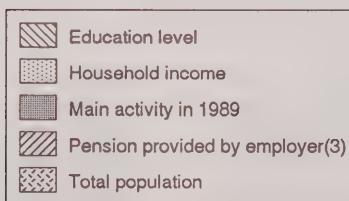
Having documented a preference for choice of one's retirement age, the actual retirement plans among the employed will be considered. Figure X outlines retirement plans by sex; noting 28% of males and 41% of females had not planned a specific retirement age when surveyed in early 1989. Few of either sex (8% of males and 6% of females) did not plan to retire, and even fewer (1%, or

FIGURE W

Population 15 years of age and over who supported mandatory retirement by selected characteristics, Canada, 1989



% who reported an increase on level of skills



General Social Survey, 1989

(1) Includes masters, earned doctorate, bachelor or undergraduate degree, or teacher's college.

(2) Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

(3) Includes only those individuals whose main activity in 1989 was working at a job or business.

TEXT TABLE P

Population 15 years of age and over by attitudes towards mandatory retirement, by sex and age group, Canada, 1989

Age group and sex	Total population		Mandatory retirement is a good idea					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
All age groups								
Both sexes	20,248	100	7,188	35	12,582	62	478	2
Male	9,903	100	3,702	37	5,965	60	235	2
Female	10,345	100	3,486	34	6,616	64	243	2
15-24								
Both sexes	3,913	100	1,312	34	2,517	64	83	2
Male	1,989	100	663	33	1,275	64	50	3
Female	1,924	100	649	34	1,242	65	33	2
25-44								
Both sexes	8,601	100	2,957	34	5,502	64	142	2
Male	4,279	100	1,602	37	2,606	61	71	2
Female	4,322	100	1,355	31	2,896	67	71	2
45 +								
Both sexes	7,734	100	2,919	38	4,563	59	252	3
Male	3,635	100	1,437	40	2,084	57	114	3
Female	4,099	100	1,482	36	2,478	60	138	3

General Social Survey, 1989

141,000 Canadians) planned to retire after age 65. Similar proportions of both sexes (about 14%) intended to retire at age 65. Among those planning to retire before age 65, males seemed to prefer ages 55-59, whereas females were more evenly distributed across the retirement age categories of 60-64, 55-59 and less than 55 (table not shown).

Obviously, the employed had a preference for retiring before or at age 65. The planned retirement age in the labour force, among those workers who had retirement plans, was age 58 for both males and females. There were only minor occupational variations in this regard (table not shown).

Not surprisingly, age was directly related to an individual's retirement plans. Table 23 shows that the proportion of individuals who had no planned retirement age declined with age, from 44% in the 15-24 age group to 23% in the 55 and over age group. Perhaps even more pronounced was the gender difference; for instance, in the baby-boom cohort, 41% of females and 27% of males had yet to formulate retirement plans. Similarly, planning not to retire also increased with age, from 4% of the 15-24 age

group to 16% of the 55 and over age group. There were negligible sex differences in this respect.

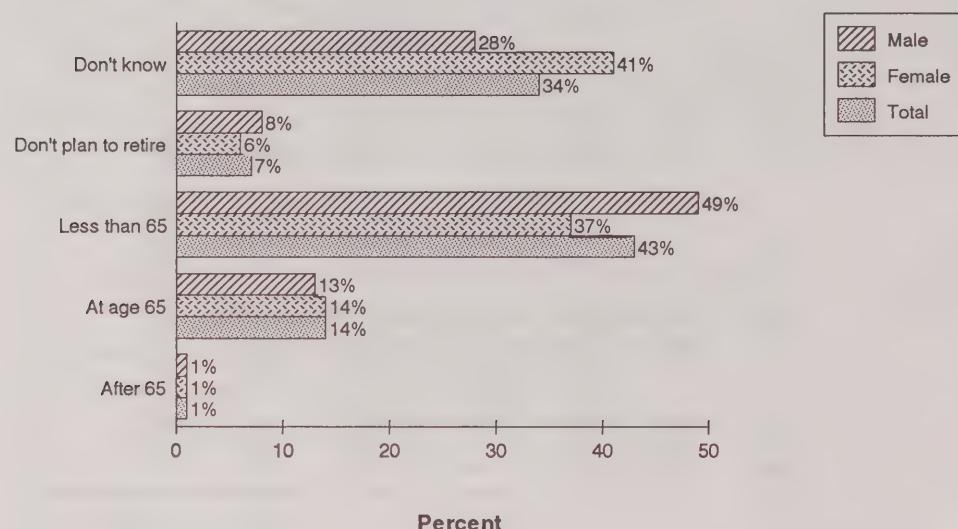
Regarding early retirement, males were more likely than females to have such plans. Generally, it was the baby-boom generation which favoured early retirement. Almost half of this cohort, compared with about one-third of 15-24-year-olds and 31% of the 55 and over group, planned to retire before age 65. Gender differences were quite pronounced, with 56% of baby-boom males planning early retirement, compared with 40% of their female counterparts. Indeed, a highlight of Table 23 is the fact that the majority of male baby boomers planned to exit the labour force (or leave full-time employment or their present careers) before reaching age 65.

Table 23 also documents almost no interprovincial variation in the percentage of adults who did not know when they planned to retire. Beyond this consistency in retirement plans, there were several interesting points of contrast. Specifically, residents of the Atlantic provinces were least likely to be planning retirement before age 65 and, conversely, were most likely to plan retirement at age 65.

FIGURE X

Employed population 15 years of age and over by planned retirement age and sex, Canada, 1989

Planned retirement age



General Social Survey, 1989

Retirement plans in Quebec were the mirror image of this, suggesting a strong preference for early retirement.

It would be insightful to explore the possible connections between retirement plans and provincial differences in working conditions, occupational structures and work orientations. But the 1989 GSS could only identify these topics as deserving further study. The analysis of retirement plans could be examined for differences by age group, occupation, household income and participation in employer-sponsored pension plans.

Table 24 shows how these plans vary across occupational groups. Individuals employed in artistic and literary, primary, clerical or service jobs were less likely to have retirement plans than were managers and administrators, teachers, and construction and transportation workers. The proportion of workers planning to retire between the ages of 55 and 64 was well above the labour force average in managerial and professional occupations (managerial/administrative, science/engineering, teaching), as well as in blue-collar occupations such as manufacturing and processing, and construction and transportation.

Perhaps more interesting than this interoccupational pattern regarding early retirement was the fact that males generally preferred this option, regardless of their occupational group. This corroborates a key point, just noted, concerning the importance of age and sex for explaining variations in retirement plans. Apparently these two personal characteristics may be more influential than one's occupation in determining retirement plans.

Of course other factors are also important in this respect. Table 23 rounds out the discussion of what may underlie differences in retirement plans by examining the influence of income and access to an employer-sponsored pension. Given that retirement decision-making necessarily involves financial planning, one would expect both of these factors to exert a major influence.

Table 23 confirms this, showing that household income was directly related to having concrete retirement plans and choosing early retirement. For example, 39% of employed individuals with lower household incomes had no planned retirement age, compared with 24% of those in households with incomes of \$60,000 or more. In contrast,

55% of individuals in high income households were planning early retirement, whereas about one-third of those in lower income households had such intentions.

Along the same lines, Table 23 indicates that having an employer-sponsored pension plan made early retirement more feasible. Over half of workers with employer pension plans wanted to retire before age 65, compared with just over one-third of those without such pensions. Thus, having a company pension also increased the likelihood of having concrete plans regarding retirement.

6.4.4 Pension plans among the employed

This report has documented the effects of having an employer-sponsored pension plan on retirement attitudes and plans. What, though, is the extent and distribution of business or company-sponsored pension plans among the employed population? Table 25 shows that 52% of the employed (more than 6.3 million workers) were provided with a pension plan by their business or company. There was a small gender gap (55% of employed males and 49% of employed females) in the availability of pensions.

However, pension benefits varied significantly by occupation. For example, 73% of those employed in science and engineering and teaching occupations had a pension plan, as did 64% of individuals in medical and health occupations. However, roughly one-third or less of workers in artistic and literary, service and primary occupations were provided pensions by their employer.

Table 26 examines the distribution of company or business-sponsored pension plans by age group, educational attainment and union membership. Younger workers, aged 15-24, were less likely to have pension plans at work, especially compared with workers in the 25-44 and 45-54 age groups (35% compared with 56% and 58%, respectively). Less than half of workers aged 55 and over had pension benefits. In all age groups, lower percentages of females than males had pension benefits.

Also, there were substantial differences in access to pension benefits by educational attainment. More than 60% of respondents whose highest level of education was a university degree were provided a pension plan by their employer. This dropped to 50% for those with a high school diploma, and 42% for individuals with less than high school.

Union membership was one of the strongest correlates of having an employer-sponsored pension. Specifically, 84% of union members were provided pension benefits by their employer, compared with 40% of non-union

workers. In a reversal of the trend for the employed population, among union members a slightly higher proportion of females than males had pension benefits.

One important caveat: The 1989 GSS data on employer-sponsored pension was not comparable with the pension plan coverage documented in Statistics Canada's Pension Plans in Canada.¹⁸ Specifically, the Statistics Canada pension data base indicated that, at the beginning of 1989, 44.6% of Canadian workers (almost 5 million) participated in employer pension plans. This coverage rate was substantially lower than the figure of 52% (6.3 million) provided by the 1989 GSS. There are several possible explanations for this discrepancy. The GSS data was self-reported by employees, whereas Statistics Canada's pension plan data base consisted of information provided by employers. Consequently, some of the employed (and self-employed) may have reported personal RRSPs when responding to the GSS question. It is also possible that employees of smaller businesses may be better represented in the GSS data, given that such firms may not have plans registered under provincial legislation. As such, these plans would not be recorded in Statistics Canada's pension plan data base. In any case, these different methodologies no doubt largely accounted for the non-comparability of these two estimates of pension plan coverage.

6.4.5 Age of retirement within the retired population

Survey respondents already in retirement were asked if they retired because they had reached mandatory retirement age. Assuming that for most this would have meant retiring at or near age 65, answers to this question gave an estimate of how closely Canadians' retirement behaviour conforms to the expected norm.

Table 27 indicates that 63% of retirees in Canada retired before age 65. Females (65%) were more likely than males (61%) to retire before age 65. Among males retiring before age 65, proportionally more did so between ages 60 and 64, whereas females were more evenly distributed across the three under age 65 categories. Only 17% retired at age 65, while another 16% retired after age 65.

Initially, it appears that retirement behaviour varied little by the type of former occupation. However, when males and females were examined separately, occupationally specific retirement patterns were observed. Among males, for example, those formerly employed in clerical, sales or service jobs were less likely than managerial/professional or blue-collar workers to retire before age 65. However, the reverse held true for females, with a much higher proportion of females in clerical, sales and service jobs retiring before age 65.

At this juncture it is useful to note that only 28% of the formerly employed retired because they had reached mandatory retirement age (Figure Y). Almost as important, health reasons were cited by more than one in four of the formerly employed. Only 7% retired because they had been given early retirement incentives. The largest group fell into the "other" reasons category. Analysis of these "other" responses identified two major categories: personal choice or preference, and marriage or family responsibilities (cited mainly by females).

The 1989 GSS sketched the broad contours of retirement behaviour. To better understand occupational and sex differences in retirement behaviour one would need to examine labour force status (full-time or part-time; full-year or part-year), years in the labour force and more detailed occupations.

6.4.6 Pensions among the retired

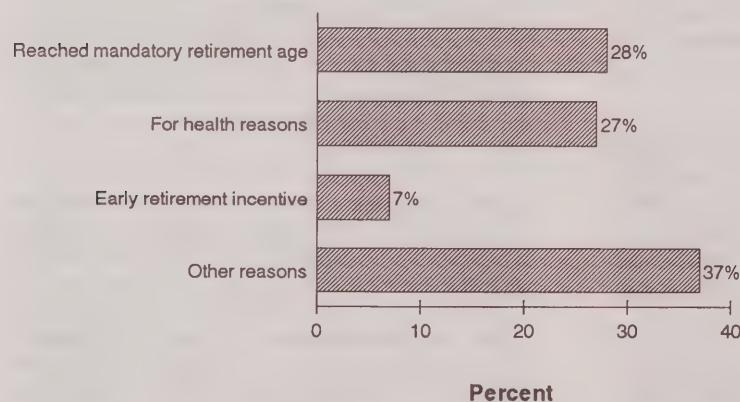
As might be expected, retirement age was related to participation in an employer pension plan (Table 27). There was a propensity for retirees (56%) receiving employer pensions to have retired between the ages of 55 and 64. However, this relationship was quite gender-specific. For example, among males, those without pensions were more likely to retire at an older age — especially after age 65. Among females, however, those without pension benefits tended to retire at an earlier age — particularly under age 55.

This last point raises questions about the distribution of pension and retirement benefits among the currently retired. Employer-sponsored pensions represented one means of support in old age. Even for those who received an employer pension (i.e. private), on average, this accounted for 32% of their total income in 1985.¹⁹ Furthermore, private pensions constituted only 15% of total income received by all persons aged 65 and over.²⁰ In fact, the combination of savings, private pension benefits and government pensions and income supplements may not provide an adequate living standard for many of the elderly.²¹ Pension reform has been on the public agenda for some time now.²² The aging of the baby-boom generation will likely increase the pressure for pension reform and for more employers to provide pension benefits.

Within this context, more information about private pension coverage provided to those already retired is required. Table 28 shows that 48% of the retired received a pension or some form of retirement benefits from a former employer. Overall, three in five retired males received pension benefits from a former employer, compared with less than three in ten females. Lack of access to private pensions was one of the contributing factors to the higher incidence of poverty among elderly females.

Table 29 shows what percentage of those with employer pensions had their benefits adjusted to changes in the cost of living. Overall, 58% of the retired who received an employer pension had it indexed for inflation, although it

FIGURE Y
Retired population by reasons for retirement, Canada, 1989



General Social Survey, 1989

is not known if this indexing was full or partial. In an interesting reversal of the gender gap in pension benefits, females receiving pension benefits were actually more likely to have them adjusted to the cost of living than were males. A possible explanation is that females receiving pension benefits were more likely than males to have been formerly employed in the public sector, where indexed pensions were common. Former managerial and professional employees, compared to other occupations, reported the highest level of pension coverage and cost-of-living indexing (Tables 28 and 29).

The provincial distribution of pensions or retirement benefits provided by former employers is documented in Table 28. With the exception of two Prairie provinces, all provinces came fairly close to the national average. One explanation for these relatively low rates of private pension coverage in Manitoba and Alberta was the relatively high proportion of self-employed, given their agricultural and resource-based economies. However, the 1989 GSS did not ask the formerly self-employed whether they had other sources of retirement income.

Figure Z reveals major occupational differences in pension benefits received by the retired. The vast majority of retired individuals formerly employed in science and engineering, and teaching occupations received pensions or retirement benefits from former employers. This figure dropped to 64% among former managers and administrators and to 60% among former manufacturing workers. Individuals who retired from service jobs were least likely to be receiving a pensions from their former employer.

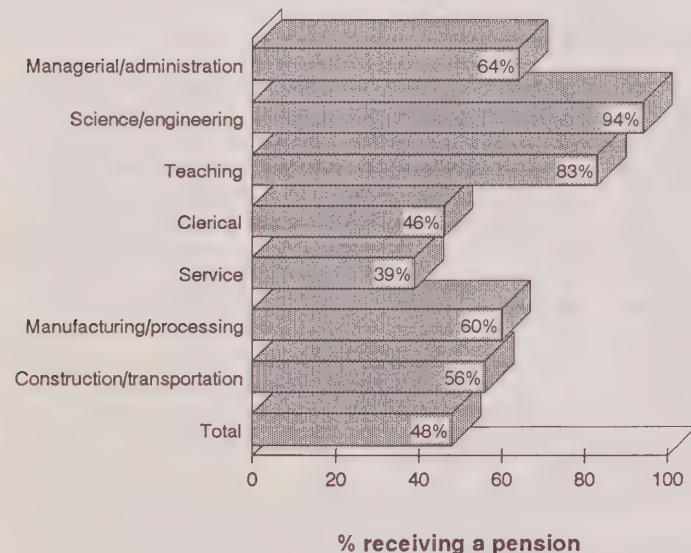
6.4.7 Retirees' quality of life

Is retirement really the golden years of one's life? Or does inadequate income and failing health, not to mention a host of other problems older people may face, reduce one's enjoyment of life?

The 1989 GSS probed these issues briefly, asking the retired about their enjoyment of life now compared to the year before they retired. According to Text Table Q, the largest group, 46% of males and 39% of females, enjoyed life more after retiring than before. Only 17% said

FIGURE Z
Retired population by receiving pension/retirement benefits and former occupation, Canada, 1989

Former occupation



General Social Survey, 1989

that they enjoyed retired life less. For 35% of males and 42% of females, enjoyment of life was about the same as before they retired.

Having more leisure time was the main reason for greater enjoyment of life after retiring. Coming a very distant second was more time to spend with family. Few retired individuals mentioned more travel or more time for voluntary activities as their main reason for enjoying life more now.

The leading reason for enjoying life less now than before retirement was health. This echoes the earlier finding that 27% of the formerly employed retired for health reasons. The second most frequently cited reason for enjoying life less was reduced contact with people.

In sum, life for the majority of retirees was at least as enjoyable, if not more so, than before they retired. Another way of measuring quality of life is to examine individuals' satisfaction with specific aspects of their lives.

Figure AA compares the retired, employed and students (based on main activity at the time of the survey) in terms of satisfaction with health, education, and finances. The vast majority (90% or more) of the employed and students were satisfied or somewhat satisfied with their health, compared with 71% of the retired. In terms of education, a much higher proportion of students reported satisfaction with their education than either of the two other groups.

There was greater satisfaction among retired respondents with their finances than among the employed or students. Over 80% of the retired were satisfied with this aspect of their life, compared with 77% of the employed and 58% of students. This finding suggests that many of the elderly may have lowered their expectations in order to adapt to a reduced retirement income. Further indication that elderly Canadians were more positive when judging their quality of life was that 86% of retirees were satisfied with their retirement (table not shown). This remarkably high level of satisfaction varied somewhat by household income. The fact that 87% of low-income retirees (household

TEXT TABLE Q
Retired population by sex and enjoyment of life and reasons, Canada, 1989

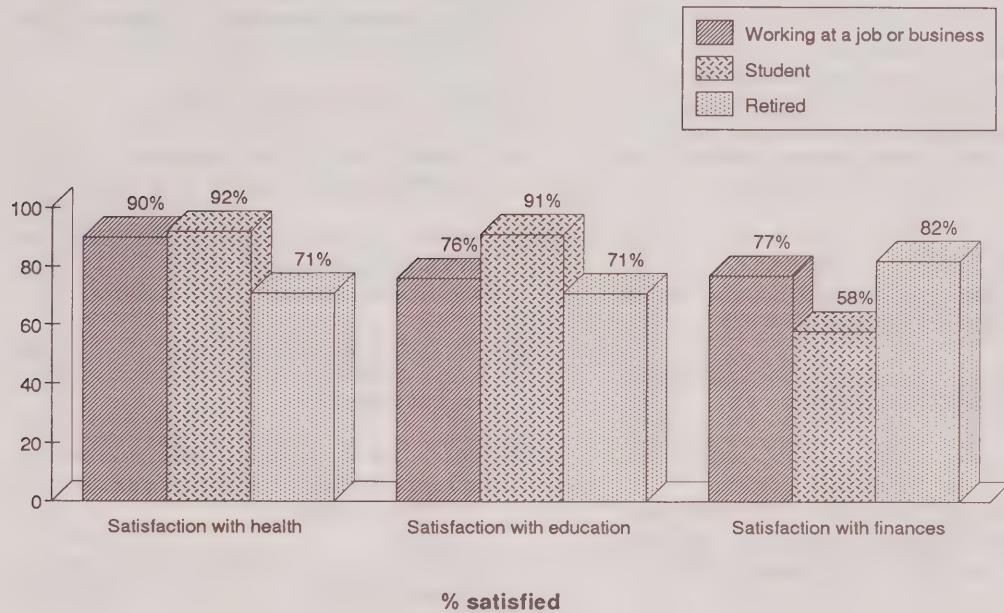
Enjoyment of life compared to year before retirement	Total retired population ¹		Male		Female	
	No.	%	No.	%	No.	%
(Numbers in thousands)						
Total	2,205	100	1,356	100	849	100
Main reason enjoy life more:						
Total	955	43	623	46	332	39
More leisure time	638	29	428	32	210	25
More travel	70	3	43	3	27	3
More time with family	113	5	74	5	38	4
More time for voluntary activities	69	3	38	3	31	4
Other	60	3	33	2	27	3
Not stated	—	—	—	—	—	—
Main reason enjoy life less:						
Total	377	17	238	18	139	16
Health	221	10	143	11	77	9
Decrease in income	—	—	—	—	—	—
Less contact with people	73	3	38	3	35	4
Other	54	2	31	2	—	—
Not stated	—	—	—	—	—	—
About the same	830	38	476	35	355	42
Not stated	43	2	—	—	—	—

¹ This figure represents the retired population that were employed at a job or business prior to retirement. Excluded are approximately 99,000 people who stated on the GSS 4-2 form that their main activity in the last seven days was retired but had also stated they had never worked at a job or business.

General Social Survey, 1989

FIGURE AA

Population 15 years of age and over by main activity and satisfaction with health, education, and finances, Canada, 1989



General Social Survey, 1989

incomes of less than \$15,000) reported satisfaction with their retirement raises questions about the relative standards individuals use for making these evaluations. For example, does this apparent contentment with retirement merely reflect a stark realization among many elderly people that, regardless of their circumstances, there is little they can do to change things?

6.5 DISCUSSION

This chapter has explored questions critical to Canada's future. The process of population aging, especially as the baby-boom generation grows older, will be accompanied by changes in how society defines work and retirement.

Based on the findings of the 1989 GSS, it was readily apparent that individual attitudes and behaviour are undergoing adjustment. Mandatory retirement was rejected by the majority of employed Canadians. Few agreed with the custom of having employees retire at age 65. And

only a small minority themselves planned to retire at age 65 or later. What is now called early retirement indeed may become the new norm, particularly among males in the baby-boom generation.

These attitudes toward mandatory retirement and individual retirement plans have direct relevance for public policy. Will the attitudes and plans regarding retirement documented be reflected in legislation affecting pensions and retirement or in private pension provisions? Equally important, what will baby boomers do after retiring early? Among the possible choices are begin another career (perhaps part-time), engage in voluntary activities, return to school, or pursue recreational interests. In sum, whatever trends emerge in this regard will have enormous implications for society.

Among those already retired, less than half (48%) received an employer-sponsored pension. How adequately these benefits provide a decent living standard has not been

examined in the 1989 GSS. Nor have other sources of financial support been documented. Despite the satisfaction retirees expressed with their financial situation, the whole question of living standards among the elderly requires more thorough investigation.

Nonetheless, Canada's retired population appears to be relatively content with their quality of life. A sizeable minority enjoyed life more since retiring. Increased leisure time was cited as the main reason for this. Canadians should not, however, ignore the fact that for others, albeit fewer in number, health problems detracted from their overall satisfaction with retirement.

NOTES

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TABLE 21

Employed population 15 years of age and over by attitudes towards mandatory retirement, by sex and occupation, Canada, 1989

Sex and occupation	Total employed population		Mandatory retirement is a good idea					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All occupations	12,155	100	4,031	33	7,909	65	215	2
Managerial/administration	1,919	100	547	29	1,337	70	35	2
Science/engineering	602	100	180	30	416	69	—	—
Social science	338	100	64	19	267	79	—	—
Teaching	681	100	161	24	513	75	—	—
Medicine/health	638	100	178	28	456	72	—	—
Artistic/literary	264	100	53	20	203	77	—	—
Clerical	1,975	100	624	32	1,304	66	47	2
Sales	1,032	100	248	24	765	74	—	—
Service	1,394	100	557	40	822	59	—	—
Primary	419	100	133	32	279	67	—	—
Manufacturing/processing	1,409	100	654	46	720	51	34	2
Construction/transportation	953	100	391	41	545	57	—	—
Other occupations	436	100	212	49	222	51	—	—
Not stated	94	100	30	32	59	62	—	—
Male								
All occupations	6,726	100	2,398	36	4,205	63	123	2
Managerial/administration	1,243	100	339	27	882	71	—	—
Science/engineering	478	100	139	29	334	70	—	—
Social science	179	100	33	18	145	81	—	—
Teaching	269	100	75	28	189	70	—	—
Medicine/health	153	100	47	31	104	68	—	—
Artistic/literary	128	100	—	—	96	75	—	—
Clerical	419	100	161	39	250	60	—	—
Sales	522	100	149	28	366	70	—	—
Service	585	100	251	43	328	56	—	—
Primary	352	100	111	32	234	67	—	—
Manufacturing/processing	1,121	100	524	47	567	51	30	3
Construction/transportation	891	100	370	42	503	56	—	—
Other occupations	327	100	162	50	162	49	—	—
Not stated	60	100	—	—	45	75	—	—
Female								
All occupations	5,428	100	1,633	30	3,704	68	92	2
Managerial/administration	675	100	208	31	455	67	—	—
Science/engineering	125	100	41	33	82	66	—	—
Social science	159	100	32	20	122	77	—	—
Teaching	412	100	86	21	325	79	—	—
Medicine/health	486	100	131	27	353	73	—	—
Artistic/literary	135	100	28	20	107	79	—	—
Clerical	1,556	100	463	30	1,055	68	39	2
Sales	510	100	100	20	399	78	—	—
Service	809	100	306	38	494	61	—	—
Primary	67	100	—	—	44	66	—	—
Manufacturing/processing	287	100	129	45	153	53	—	—
Construction/transportation	63	100	—	—	42	67	—	—
Other occupations	109	100	49	45	60	55	—	—
Not stated	35	100	—	—	—	—	—	—

General Social Survey, 1989

TABLE 22

Employed population 15 years of age and over who were in favor of mandatory retirement by suggested mandatory retirement age and age group then educational attainment then household income then availability of pension plan at work, Canada, 1989

Selected characteristics	Total employed population		Suggested mandatory retirement age											
			Less than 55		55-59		60-64		65		Over 65		Not stated	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)														
Age groups														
Total	4,031	100	169	4	778	19	1,468	36	1,496	37	79	2	40	1
15-24	675	100	—	—	127	19	186	28	292	43	34	5	—	—
25-44	2,257	100	121	5	506	22	811	36	761	34	39	2	—	—
45-54	678	100	—	—	130	19	288	43	230	34	—	—	—	—
55 +	421	100	—	—	—	—	183	43	213	50	—	—	—	—
Educational attainment														
Total	4,031	100	169	4	778	19	1,468	36	1,496	37	79	2	40	1
University degree ¹	545	100	—	—	97	18	147	27	250	46	28	5	—	—
Postsecondary diploma ²	944	100	31	3	212	23	350	37	330	35	—	—	—	—
High school diploma	1,194	100	81	7	220	18	389	33	467	39	29	2	—	—
Less than high school	1,313	100	43	3	244	19	570	43	430	33	—	—	—	—
Other ³	35	100	—	—	—	—	—	—	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Household income														
Total	4,031	100	169	4	778	19	1,468	36	1,496	37	79	2	40	1
Less than \$30,000	898	100	36	4	168	19	355	40	320	36	—	—	—	—
\$30,000 - \$59,999	1,803	100	81	5	386	21	681	38	628	35	—	—	—	—
\$60,000 and more	715	100	28	4	153	21	214	30	283	40	28	4	—	—
Don't know	424	100	—	—	45	11	138	32	196	46	—	—	—	—
Not stated	191	100	—	—	26	14	81	42	69	36	—	—	—	—
Pension plan at work														
Total	4,031	100	169	4	778	19	1,468	36	1,496	37	79	2	40	1
Yes	2,299	100	87	4	509	22	824	36	828	36	34	1	—	—
No	1,624	100	79	5	258	16	594	37	630	39	41	3	—	—
Don't know	106	100	—	—	—	—	51	48	36	34	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Social Survey, 1989

¹ Includes masters, earned doctorate, bachelor, undergraduate degree or teacher's college.

² Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

³ "Other" includes "No schooling".

TABLE 23

Employed population 15 years of age and over by planned retirement age, age group and sex then province then household income then availability of pension plan at work,
Canada, 1989

Selected characteristics	Total employed population				Planned retirement age					
	Less than 55		55-59		60-64		65			
	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)										
All age groups										
Both sexes	12,155	100	1,229	10	2,344	19	1,703	14	1,667	14
Male	6,726	100	676	10	1,542	23	1,074	16	894	13
Female	5,428	100	553	10	801	15	628	12	773	14
15-24										
Both sexes	2,141	100	221	10	283	13	232	11	328	15
Male	1,089	100	143	13	185	17	122	11	128	12
Female	1,053	100	78	7	97	9	110	10	201	19
25-44										
Both sexes	6,682	100	937	14	1,583	24	750	11	742	11
Male	3,700	100	493	13	1,083	29	491	13	376	10
Female	2,982	100	444	15	500	17	258	9	366	12
45-54										
Both sexes	2,013	100	72	4	415	21	379	19	263	13
Male	1,135	100	41	4	241	21	259	23	164	14
Female	879	100	31	4	174	20	120	14	99	11
55 +										
Both sexes	1,318	100	—	—	63	5	342	26	334	25
Male	803	100	—	—	33	4	202	25	227	28
Female	515	100	—	—	30	6	140	27	107	21
Province										
Canada	12,155	100	1,229	10	2,344	19	1,703	14	1,667	14
Newfoundland	166	100	—	—	40	24	—	—	34	21
Prince Edward Island	44	100	—	—	—	—	—	—	—	—
Nova Scotia	393	100	40	10	73	18	41	10	74	19
New Brunswick	301	100	—	—	49	16	49	16	71	23
Quebec	2,980	100	405	14	682	23	445	15	249	8
Ontario	4,802	100	375	8	828	17	663	14	695	14
Manitoba	499	100	44	9	105	21	60	12	86	17
Saskatchewan	431	100	38	9	76	18	53	12	71	17
Alberta	1,154	100	132	11	235	20	132	11	204	18
British Columbia	1,385	100	150	11	248	18	244	18	173	12
Household income										
Total	12,155	100	1,229	10	2,344	19	1,703	14	1,667	14
Less than \$30,000	2,370	100	146	6	310	13	311	13	450	19
\$30,000 - \$59,999	4,943	100	590	12	1,159	23	769	16	704	14
\$60,000 and more	2,521	100	354	14	642	25	400	16	241	10
Don't know	1,571	100	106	7	132	8	141	9	192	12
Not stated	749	100	34	5	100	13	82	11	79	11
Pension plan at work										
Total	12,155	100	1,229	10	2,344	19	1,703	14	1,667	14
Yes	6,345	100	635	10	1,643	26	1,012	16	879	14
No	5,392	100	576	11	679	13	640	12	744	14
Don't know	351	100	—	—	—	—	50	14	43	12
Not stated	66	100	—	—	—	—	—	—	—	—

TABLE 23

Employed population 15 years of age and over by planned retirement age, age group and sex then province then household income then availability of pension plan at work,
Canada, 1989 — concluded

Selected characteristics	Planned retirement age							
	Over 65		Don't plan to retire		Don't know		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
All age groups								
Both sexes	141	1	864	7	4,083	34	125	1
Male	92	1	519	8	1,860	28	68	1
Female	49	1	344	6	2,223	41	57	1
15-24								
Both sexes	30	1	90	4	936	44	—	—
Male	—	—	49	4	436	40	—	—
Female	—	—	41	4	500	47	—	—
25-44								
Both sexes	45	1	371	6	2,207	33	48	1
Male	36	1	214	6	987	27	—	—
Female	—	—	158	5	1,220	41	28	1
45-54								
Both sexes	—	—	188	9	632	31	40	2
Male	—	—	122	11	272	24	26	2
Female	—	—	66	8	361	41	—	—
55+								
Both sexes	41	3	214	16	308	23	—	—
Male	29	4	135	17	165	21	—	—
Female	—	—	79	15	142	28	—	—
Province								
Canada	141	1	864	7	4,083	34	125	1
Newfoundland	—	—	—	—	48	29	—	—
Prince Edward Island	—	—	—	—	—	—	—	—
Nova Scotia	—	—	26	7	137	35	—	—
New Brunswick	—	—	—	—	97	32	—	—
Quebec	26	1	159	5	978	33	36	1
Ontario	52	1	439	9	1,706	36	43	1
Manitoba	—	—	—	—	180	36	—	—
Saskatchewan	—	—	39	9	142	33	—	—
Alberta	—	—	67	6	362	31	—	—
British Columbia	—	—	93	7	420	30	36	3
Household income								
Total	141	1	864	7	4,083	34	125	1
Less than \$30,000	37	2	182	8	919	39	—	—
\$30,000 - \$59,999	57	1	255	5	1,392	28	—	—
\$60,000 and more	33	1	226	9	615	24	—	—
Don't know	—	—	138	9	850	54	—	—
Not stated	—	—	63	8	307	41	81	11
Pension plan at work								
Total	141	1	864	7	4,083	34	125	1
Yes	42	1	272	4	1,824	29	39	1
No	98	2	556	10	2,071	38	29	1
Don't know	—	—	36	10	186	53	—	—
Not stated	—	—	—	—	—	—	57	86

General Social Survey, 1989

TABLE 24

Employed population 15 years of age and over by planned retirement age, sex and occupation,
Canada, 1989

Sex and occupation	Total employed population		Planned retirement age							
			Less than 55		55-59		60-64		65	
	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)										
Both sexes										
All occupations	12,155	100	1,229	10	2,344	19	1,703	14	1,667	14
Managerial/administration	1,919	100	213	11	421	22	330	17	218	11
Science/engineering	602	100	53	9	166	28	86	14	61	10
Social science	338	100	—	—	38	11	—	—	58	17
Teaching	681	100	57	8	180	26	87	13	100	15
Medicine/health	638	100	71	11	118	18	102	16	79	12
Artistic/literary	264	100	31	12	31	12	—	—	—	—
Clerical	1,975	100	210	11	322	16	249	13	271	14
Sales	1,032	100	96	9	181	18	133	13	127	12
Service	1,394	100	161	12	155	11	175	13	244	17
Primary	419	100	—	—	73	17	38	9	64	15
Manufacturing/processing	1,409	100	139	10	325	23	221	16	234	17
Construction/transportation	953	100	121	13	230	24	145	15	119	12
Other occupations	436	100	—	—	91	21	80	18	70	16
Not stated	94	100	—	—	—	—	—	—	—	—
Male										
All occupations	6,726	100	676	10	1,542	23	1,074	16	894	13
Managerial/administration	1,243	100	149	12	296	24	237	19	127	10
Science/engineering	478	100	40	8	136	29	64	13	51	11
Social science	179	100	—	—	—	—	—	—	41	23
Teaching	269	100	—	—	77	29	43	16	50	19
Medicine/health	153	100	—	—	40	26	39	25	—	—
Artistic/literary	128	100	—	—	—	—	—	—	—	—
Clerical	419	100	35	8	99	24	70	17	49	12
Sales	522	100	39	8	112	21	78	15	71	14
Service	585	100	85	15	92	16	83	14	99	17
Primary	352	100	—	—	62	18	32	9	51	15
Manufacturing/processing	1,121	100	120	11	285	25	197	18	188	17
Construction/transportation	891	100	113	13	220	25	140	16	109	12
Other occupations	327	100	—	—	79	24	71	22	42	13
Not stated	60	100	—	—	—	—	—	—	—	—
Female										
All occupations	5,428	100	553	10	801	15	628	12	773	14
Managerial/administration	675	100	64	10	125	18	93	14	91	13
Science/engineering	125	100	—	—	30	24	—	—	—	—
Social science	159	100	—	—	—	—	—	—	—	—
Teaching	412	100	34	8	104	25	44	11	50	12
Medicine/health	486	100	67	14	78	16	63	13	73	15
Artistic/literary	135	100	—	—	—	—	—	—	—	—
Clerical	1,556	100	175	11	222	14	179	12	222	14
Sales	510	100	57	11	70	14	55	11	56	11
Service	809	100	76	9	63	8	92	11	145	18
Primary	67	100	—	—	—	—	—	—	—	—
Manufacturing/processing	287	100	—	—	41	14	—	—	46	16
Construction/transportation	63	100	—	—	—	—	—	—	—	—
Other occupations	109	100	—	—	—	—	—	—	28	26
Not stated	35	100	—	—	—	—	—	—	—	—

TABLE 24

Employed population 15 years of age and over by planned retirement age, sex and occupation,
Canada, 1989 — concluded

Sex and occupation	Planned retirement age							
	Over 65		Don't plan to retire		Don't know		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
All occupations	141	1	864	7	4,083	34	125	1
Managerial/administration	37	2	171	9	507	26	—	—
Science/engineering	—	—	41	7	184	31	—	—
Social science	—	—	42	13	127	38	—	—
Teaching	—	—	57	8	192	28	—	—
Medicine/health	—	—	48	8	216	34	—	—
Artistic/literary	—	—	51	19	109	41	—	—
Clerical	—	—	101	5	775	39	33	2
Sales	—	—	95	9	375	36	—	—
Service	—	—	101	7	543	39	—	—
Primary	—	—	37	9	167	40	—	—
Manufacturing/processing	—	—	39	3	425	30	—	—
Construction/transportation	—	—	64	7	259	27	—	—
Other occupations	—	—	—	—	157	36	—	—
Not stated	—	—	—	—	46	49	—	—
Male								
All occupations	92	1	519	8	1,860	28	68	1
Managerial/administration	—	—	113	9	282	23	—	—
Science/engineering	—	—	37	8	142	30	—	—
Social science	—	—	—	—	52	29	—	—
Teaching	—	—	—	—	48	18	—	—
Medicine/health	—	—	31	21	31	21	—	—
Artistic/literary	—	—	27	21	59	46	—	—
Clerical	—	—	32	8	124	30	—	—
Sales	—	—	59	11	154	29	—	—
Service	—	—	37	6	180	31	—	—
Primary	—	—	35	10	135	38	—	—
Manufacturing/processing	—	—	28	3	283	25	—	—
Construction/transportation	—	—	58	6	235	26	—	—
Other occupations	—	—	—	—	106	32	—	—
Not stated	—	—	—	—	29	49	—	—
Female								
All occupations	49	1	344	6	2,223	41	57	1
Managerial/administration	—	—	58	9	225	33	—	—
Science/engineering	—	—	—	—	42	34	—	—
Social science	—	—	—	—	76	48	—	—
Teaching	—	—	32	8	144	35	—	—
Medicine/health	—	—	—	—	185	38	—	—
Artistic/literary	—	—	—	—	51	37	—	—
Clerical	—	—	69	4	651	42	29	2
Sales	—	—	36	7	221	43	—	—
Service	—	—	64	8	362	45	—	—
Primary	—	—	—	—	32	48	—	—
Manufacturing/processing	—	—	—	—	142	50	—	—
Construction/transportation	—	—	—	—	—	—	—	—
Other occupations	—	—	—	—	51	47	—	—
Not stated	—	—	—	—	—	—	—	—

General Social Survey, 1989

TABLE 25

Employed population 15 years of age and over by availability of pension plan at work, sex and occupation, Canada, 1989

Sex and occupation	Total employed population				Pension plan at work					
	Yes		No		Don't know		Not stated			
	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)										
Both sexes										
All occupations	12,155	100	6,345	52	5,392	44	351	3	66	1
Managerial/administration	1,919	100	1,032	54	863	45	—	—	—	—
Science/engineering	602	100	441	73	152	25	—	—	—	—
Social science	338	100	185	55	148	44	—	—	—	—
Teaching	681	100	497	73	182	27	—	—	—	—
Medicine/health	638	100	406	64	222	35	—	—	—	—
Artistic/literary	264	100	75	28	185	70	—	—	—	—
Clerical	1,975	100	1,109	56	788	40	66	3	—	—
Sales	1,032	100	385	37	582	56	54	5	—	—
Service	1,394	100	481	34	814	58	95	7	—	—
Primary	419	100	109	26	296	71	—	—	—	—
Manufacturing/processing	1,409	100	823	58	514	36	59	4	—	—
Construction/transportation	953	100	496	52	452	47	—	—	—	—
Other occupations	436	100	261	60	152	35	—	—	—	—
Not stated	94	100	45	48	44	47	—	—	—	—
Male										
All occupations	6,726	100	3,667	55	2,841	42	189	3	30	—
Managerial/administration	1,243	100	672	54	555	45	—	—	—	—
Science/engineering	478	100	342	72	127	27	—	—	—	—
Social science	179	100	106	59	72	40	—	—	—	—
Teaching	269	100	222	83	47	17	—	—	—	—
Medicine/health	153	100	87	57	63	41	—	—	—	—
Artistic/literary	128	100	42	32	87	68	—	—	—	—
Clerical	419	100	238	57	159	38	—	—	—	—
Sales	522	100	174	33	308	59	35	7	—	—
Service	585	100	282	48	258	44	45	8	—	—
Primary	352	100	96	27	252	72	—	—	—	—
Manufacturing/processing	1,121	100	691	62	370	33	51	5	—	—
Construction/transportation	891	100	459	52	427	48	—	—	—	—
Other occupations	327	100	220	67	93	28	—	—	—	—
Not stated	60	100	35	59	—	—	—	—	—	—
Female										
All occupations	5,428	100	2,678	49	2,552	47	162	3	36	1
Managerial/administration	675	100	360	53	308	46	—	—	—	—
Science/engineering	125	100	99	79	25	20	—	—	—	—
Social science	159	100	79	50	76	48	—	—	—	—
Teaching	412	100	275	67	135	33	—	—	—	—
Medicine/health	486	100	318	66	159	33	—	—	—	—
Artistic/literary	135	100	34	25	98	72	—	—	—	—
Clerical	1,556	100	871	56	629	40	44	3	—	—
Sales	510	100	211	41	274	54	—	—	—	—
Service	809	100	199	25	556	69	50	6	—	—
Primary	67	100	—	—	44	66	—	—	—	—
Manufacturing/processing	287	100	131	46	144	50	—	—	—	—
Construction/transportation	63	100	37	59	25	41	—	—	—	—
Other occupations	109	100	41	37	59	54	—	—	—	—
Not stated	35	100	—	—	—	—	—	—	—	—

General Social Survey, 1989

TABLE 26

Employed population 15 years of age and over by availability of pension plan at work, age group and sex then educational attainment then member of a labour union and sex, Canada, 1989

Selected characteristics	Total employed population				Pension plan at work					
	Yes		No		Don't know		Not stated			
	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)										
All age groups										
Both sexes	12,155	100	6,345	52	5,392	44	351	3	66	1
Male	6,726	100	3,667	55	2,841	42	189	3	30	—
Female	5,428	100	2,678	49	2,552	47	162	3	36	1
15-24										
Both sexes	2,141	100	751	35	1,203	56	171	8	—	—
Male	1,089	100	400	37	590	54	94	9	—	—
Female	1,053	100	351	33	613	58	77	7	—	—
25-44										
Both sexes	6,682	100	3,771	56	2,743	41	151	2	—	—
Male	3,700	100	2,160	58	1,456	39	81	2	—	—
Female	2,982	100	1,610	54	1,286	43	71	2	—	—
45-54										
Both sexes	2,013	100	1,177	58	808	40	—	—	—	—
Male	1,135	100	689	61	428	38	—	—	—	—
Female	879	100	488	56	381	43	—	—	—	—
55 +										
Both sexes	1,318	100	647	49	639	48	—	—	—	—
Male	803	100	418	52	367	46	—	—	—	—
Female	515	100	229	44	272	53	—	—	—	—
Educational attainment										
Total	12,155	100	6,345	52	5,392	44	351	3	66	1
University degree ¹	2,248	100	1,424	63	804	36	—	—	—	—
Postsecondary diploma ²	2,874	100	1,693	59	1,119	39	57	2	—	—
High school diploma	3,672	100	1,821	50	1,691	46	128	3	32	1
Less than high school	3,260	100	1,368	42	1,718	53	148	5	26	1
Other ³	101	100	38	38	61	61	—	—	—	—
Member of a labour union										
Total										
Both sexes	12,155	100	6,345	52	5,392	44	351	3	66	1
Male	6,726	100	3,667	55	2,841	42	189	3	30	—
Female	5,428	100	2,678	49	2,552	47	162	3	36	1
Yes										
Both sexes	3,287	100	2,759	84	463	14	60	2	—	—
Male	2,053	100	1,715	84	294	14	43	2	—	—
Female	1,234	100	1,043	85	169	14	—	—	—	—
No										
Both sexes	8,772	100	3,552	40	4,916	56	287	3	—	—
Male	4,629	100	1,939	42	2,538	55	143	3	—	—
Female	4,143	100	1,613	39	2,378	57	144	3	—	—
Not stated										
Both sexes	96	100	34	36	—	—	—	—	44	46
Male	45	100	—	—	—	—	—	—	—	—
Female	51	100	—	—	—	—	—	—	—	—

General Social Survey, 1989

¹ Includes masters, earned doctorate, bachelor, undergraduate degree or teacher's college.

² Includes diploma or certificate from community college, CEGEP, nursing school, trade, technical or vocational school, or business college.

³ "Other" includes "No schooling".

TABLE 27

Retired population by retirement age, major occupational groups and sex then receiving pension/retirement benefits and sex, Canada, 1989

Selected characteristics	Total retired population ¹								Age retired						
	Less than 55		55-59		60-64		65		Over 65		Not stated				
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
(Numbers in thousands)															
Occupation															
Total															
Both sexes	2,205	100	345	16	411	19	626	28	373	17	352	16	98	4	
Male	1,356	100	155	11	236	17	435	32	264	19	242	18	—	—	
Female	849	100	190	22	175	21	191	22	110	13	109	13	74	9	
All occupations															
Both sexes	2,119	100	344	16	401	19	603	28	361	17	347	16	63	3	
Male	1,323	100	154	12	236	18	419	32	259	20	240	18	—	—	
Female	796	100	190	24	165	21	183	23	102	13	107	13	50	6	
Managerial/professional															
Both sexes	529	100	59	11	109	21	165	31	92	17	87	17	—	—	
Male	329	100	31	10	67	20	111	34	59	18	60	18	—	—	
Female	200	100	28	14	42	21	54	27	33	16	28	14	—	—	
Clerical/sales/service															
Both sexes	771	100	162	21	130	17	194	25	119	15	130	17	35	5	
Male	301	100	—	—	50	17	79	26	69	23	68	23	—	—	
Female	470	100	137	29	80	17	115	24	49	11	62	13	26	5	
Blue-collar															
Both sexes	819	100	122	15	161	20	243	30	151	18	129	16	—	—	
Male	693	100	98	14	119	17	229	33	131	19	113	16	—	—	
Female	126	100	—	—	42	34	—	—	—	—	—	—	—	—	
Not stated															
Both sexes	86	100	—	—	—	—	—	—	—	—	—	—	34	40	
Male	33	100	—	—	—	—	—	—	—	—	—	—	—	—	
Female	53	100	—	—	—	—	—	—	—	—	—	—	—	—	
Received pension/retirement benefits															
Total															
Both sexes	2,205	100	345	16	411	19	626	28	373	17	352	16	98	4	
Male	1,356	100	155	11	236	17	435	32	264	19	242	18	—	—	
Female	849	100	190	22	175	21	191	22	110	13	109	13	74	9	
Yes															
Both sexes	1,055	100	100	10	216	21	374	35	209	20	154	15	—	—	
Male	816	100	84	10	154	19	301	37	165	20	112	14	—	—	
Female	239	100	—	—	63	26	73	31	44	19	42	17	—	—	
No															
Both sexes	1,114	100	243	22	195	17	251	23	160	14	196	18	70	6	
Male	525	100	69	13	83	16	135	26	99	19	128	24	—	—	
Female	589	100	174	30	112	19	116	20	62	10	68	12	57	10	
Not stated															
Both sexes	36	100	—	—	—	—	—	—	—	—	—	—	27	74	
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

General Social Survey, 1989

¹ This figure represents the retired population that were employed at a job or business prior to retirement. Excluded are approximately 99,000 people who stated on the GSS 4-2 form that their main activity in the last seven days was retired but had also stated they had never worked at a job or business.

TABLE 28

Retired population by receiving pension/retirement benefits, sex and major occupational groups then province, Canada, 1989

Sex and occupation then province	Total retired population ¹		Received pension/retirement benefits					
			Yes		No		Not stated	
	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)								
Both sexes								
Total	2,205	100	1,055	48	1,114	51	36	2
All occupations	2,119	100	1,026	48	1,090	51	—	—
Managerial/professional	529	100	340	64	187	35	—	—
Clerical/sales/service	771	100	304	39	467	61	—	—
Blue-collar	819	100	383	47	436	53	—	—
Not stated	86	100	28	33	—	—	33	39
Male								
Total	1,356	100	816	60	525	39	—	—
All occupations	1,323	100	803	61	517	39	—	—
Managerial/professional	329	100	233	71	93	28	—	—
Clerical/sales/service	301	100	203	67	98	33	—	—
Blue-collar	693	100	367	53	326	47	—	—
Not stated	33	100	—	—	—	—	—	—
Female								
Total	849	100	239	28	589	69	—	—
All occupations	796	100	223	28	573	72	—	—
Managerial/professional	200	100	107	53	93	47	—	—
Clerical/sales/service	470	100	101	21	369	79	—	—
Blue-collar	126	100	—	—	110	88	—	—
Not stated	53	100	—	—	—	—	—	—
Province								
Canada	2,205	100	1,055	48	1,114	51	36	2
Newfoundland	42	100	—	—	26	63	—	—
Prince Edward Island	—	—	—	—	—	—	—	—
Nova Scotia	80	100	46	57	34	43	—	—
New Brunswick	56	100	27	48	27	49	—	—
Quebec	464	100	240	52	222	48	—	—
Ontario	853	100	422	49	419	49	—	—
Manitoba	102	100	43	42	58	57	—	—
Saskatchewan	84	100	—	—	62	74	—	—
Alberta	173	100	65	38	102	59	—	—
British Columbia	341	100	173	51	156	46	—	—

General Social Survey, 1989

¹ This figure represents the retired population that were employed at a job or business prior to retirement. Excluded are approximately 99,000 people who stated on the GSS 4-2 form that their main activity in the last seven days was retired but had also stated they had never worked at a job or business.

TABLE 29

Retired population who received pension/retirement benefits by pension/retirement benefits adjusted for cost of living, sex and major occupational groups then province, Canada, 1989

Sex and occupation then province	Total retired population		Pension/retirement benefits adjusted for cost of living							
			Yes		No		Don't know		Not stated	
	No.	%	No.	%	No.	%	No.	%	No.	%
(Numbers in thousands)										
Both sexes										
Total	1,055	100	612	58	399	38	42	4	—	—
All occupations	1,026	100	588	57	395	38	42	4	—	—
Managerial/professional	340	100	240	71	88	26	—	—	—	—
Clerical/sales/service	304	100	149	49	140	46	—	—	—	—
Blue-collar	383	100	199	52	166	43	—	—	—	—
Not stated	28	100	—	—	—	—	—	—	—	—
Male										
Total	816	100	456	56	331	41	28	3	—	—
All occupations	803	100	446	55	328	41	28	3	—	—
Managerial/professional	233	100	160	69	63	27	—	—	—	—
Clerical/sales/service	203	100	94	46	105	52	—	—	—	—
Blue-collar	367	100	192	52	160	44	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—
Female										
Total	239	100	156	65	68	29	—	—	—	—
All occupations	223	100	142	64	67	30	—	—	—	—
Managerial/professional	107	100	81	76	25	23	—	—	—	—
Clerical/sales/service	101	100	55	54	35	35	—	—	—	—
Blue-collar	—	—	—	—	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—
Province										
Canada	1,055	100	612	58	399	38	42	4	—	—
Newfoundland	—	—	—	—	—	—	—	—	—	—
Prince Edward Island	—	—	—	—	—	—	—	—	—	—
Nova Scotia	46	100	35	76	—	—	—	—	—	—
New Brunswick	27	100	—	—	—	—	—	—	—	—
Quebec	240	100	136	57	95	40	—	—	—	—
Ontario	422	100	218	52	180	43	—	—	—	—
Manitoba	43	100	—	—	—	—	—	—	—	—
Saskatchewan	—	—	—	—	—	—	—	—	—	—
Alberta	65	100	49	75	—	—	—	—	—	—
British Columbia	173	100	112	65	57	33	—	—	—	—

General Social Survey, 1989

APPENDIX I

SAMPLE DESIGN AND ESTIMATION PROCEDURES

POPULATION

The target population of the 1989 General Social Survey includes all persons aged 15 and over living in Canada, with the following exceptions:

1. full-time residents of institutions;
2. residents of the Yukon and Northwest Territories.

Since random digit dialling techniques were used to select households, households (thus persons living in households) that did not have telephones at the time of the survey were excluded from the surveyed population. These households account for less than 2% of the total population.

The survey estimates have been adjusted (weighted) to represent the entire target population, including persons without telephones and other exclusions.

SAMPLE DESIGN AND SELECTION METHODS

The 1989 General Social Survey employed two different Random Digit Dialling (RDD) sampling techniques. For Newfoundland, Nova Scotia, Ontario and Alberta, the Elimination of Non-working Banks method was used while, for the remaining provinces, the Waksberg method was used.¹ Both of these methods are described below.

Note that a "bank" of telephone numbers is a group of 100 possible numbers that share the same three-digit area code, three-digit prefix and first two digits of the final part of the telephone number.

Elimination of non-working banks RDD design

The General Social Survey used the Elimination of Non-working Banks (ENWB) design to sample in Newfoundland, Nova Scotia, Ontario and Alberta.

ENWB is a form of Random Digit Dialling in which an attempt is made to identify all "working banks" for an area, i.e. to identify all banks with at least one household. Working banks were identified using telephone company lists and all possible 10-digit telephone numbers were generated for these banks. A systematic sample of telephone numbers was then generated for each stratum and an attempt was made to conduct a GSS interview with one randomly selected person from each household reached.

Waksberg RDD design

The General Social Survey used the Waksberg Random Digit Dialling (RDD) design to sample in Prince Edward Island, New Brunswick, Quebec, Manitoba, Saskatchewan and British Columbia.

The Waksberg method employs a two-stage design which increases the likelihood of contacting households over a "pure" RDD design. The following describes the procedure used for the General Social Survey in the above provinces.

For each stratum within each of these provinces, an up-to-date list of all telephone area code and prefix number combinations was obtained. Within each identified area code-prefix combination, all possible combinations of the next two digits were added to form the 100 possible banks. These banks formed the first stage sampling units (i.e. the Primary Sampling Units - PSUs).

Within each stratum, random selections were made of these banks and then the final two digits were generated at random. This number (called a "Primary" number) was called to determine whether or not it reached a household. If it did not reach a household (i.e. the number was not in service or was a business, institution, etc.), the number was dropped from further consideration. If it did reach a household, additional numbers referred to as "Secondary" numbers were generated within the same

bank (i.e. numbers with the same first eight digits as the "Primary" number). These numbers were also called to determine whether or not they reached a household. Secondary numbers were generated on a continuing basis until:

- (a) five additional households were reached in each retained bank; or
- (b) the bank was exhausted (i.e. all 100 numbers in the bank were used; or
- (c) the data collection was ended.

An attempt was made to conduct an interview with a randomly selected respondent in all "Primary" and "Secondary" households reached.

Stratification

In order to carry out sampling, each of the ten provinces with the exception of Prince Edward Island were divided into strata or geographic areas. Generally, each province had two strata, one stratum representing Census Metropolitan Areas (CMAs) of the province and the other, the non-CMA areas. Ontario and Saskatchewan were sampled from two regional offices. As a result, more strata were included in the sample design for these areas.

The area code and prefix combinations that corresponded to the strata were determined and used to select the appropriate samples in each stratum. Since area code-prefix boundaries did not always correspond exactly to the intended stratum boundaries, small biases may have been introduced at this stage.

A target sample size of approximately 12,000 households was chosen as being large enough to allow extensive analysis at the national level and limited analysis at a provincial level. It was allocated to provinces in proportion to the square root of their populations and to the strata within provinces in proportion to their populations.

WEIGHTING AND ESTIMATION

For both the Waksberg design and the Elimination of Non-working Banks design, each household within a stratum has an equal probability of selection. For the Waksberg households, the initial weight is set to a constant (1.0) for all records. For ENWB households the initial weight is equal to the total number of telephone numbers in the stratum divided by the number of sampled telephone numbers in the stratum.

The initial weight is adjusted for non-response, for the number of telephone numbers a household has, and the

number of persons living in the household who are 15 years of age or over. The second adjustment corrects for the higher probability of households with more than one telephone number being sampled and the third adjustment converts the household weight into a "person weight".

Subsequently, these "person weights" were adjusted within strata so that the estimated population sizes for the strata would agree with census projections of the population. In the final stages of sampling, the weights were adjusted for over- or under-sampling within province-sex-age groups, again using census projections for the target population. The age groups for this adjustment were:

15-19	20-24	25-29	30-34	35-39	40-44
45-49	50-54	55-59	60-64	65-69	70+

Estimation

The estimate of the number of persons in the population having a given set of characteristics is determined by summing the weights of all sampled persons with that set of characteristics. The estimates of persons presented in the tables are rounded to the nearest thousand, which not only improves readability but also provides data at an appropriate level of precision.

NOTES

1. Waksberg, J. "Sampling Methods for Random Digit Dialling." *Journal of the American Statistical Association*, 73 (1980), p. 40-46.

APPENDIX II

CYCLE FOUR QUESTIONNAIRES

The GSS 4-1 was completed for each telephone number selected in the sample. It lists all household members, collecting basic demographic information, specifically age, sex, marital status and relation to reference person. A respondent, 15 years of age or older was then randomly selected and a GSS 4-2 was completed for this person.

The GSS 4-2 questionnaire collected the following types of information from persons aged 15 and over living in the 10 provinces: the respondent's education background, both completed education and future plans; the respondent's work history, before and after their education and in 1984 and 1988; the respondent's opinions on science and technology and its effect on themselves.

**General Social Survey
Selection Control Form****GSS 4-1**

Confidential when completed

1: <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	2: <input type="text"/>
3: <input type="text"/>	4: <input type="text"/>	5: <input type="text"/>		

TELEPHONE NUMBER LABEL

RECORD OF CALLS

10	11 Date		12 Start		13 Finish		14 Result	15 Interviewer's Name	16 Comments
	Day	Month	Hour	Min	Hour	Min			
01									
02									
03									
04									
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

17. Call Coverage by Time of Day and Day of Week

Time Period	Mon	Tues.	Wed.	Thur	Fri	Sat
09:00 - 12:00						
12:01 - 16:00						
16:01 - 19:00						
19:01 - 21:00						

18. Forms Control

Form	Number of forms
GSS 4-1	<input type="checkbox"/>
GSS 4-2	<input type="checkbox"/>

19. Interviewer Number

Senior Interviewer Only

20. Final Status

30. Hello, I'm from Statistics Canada. I'm calling you for a survey on education, work and retirement.			34. Does anyone use this telephone number as a home phone number? Yes <input type="radio"/> No <input type="radio"/> → Thank respondent and END					
31. I'd like to make sure that I've dialed the right number. Is this (read number)? Yes <input type="radio"/> No <input type="radio"/> → Dial again, if still wrong. END.			35. How many persons live or stay at this address and use this number as a home phone number? Less than 15 <input type="radio"/> 15 or more <input type="radio"/> → Make appointment.					
32. All information we collect will be kept confidential. While your participation is voluntary, it is essential if the survey results are to be accurate.			36. I need to select one person from your household for an interview. Starting with the oldest, what is the name and age of each person living or staying there who has no usual place of residence elsewhere? (Enter names and ages in items 42 and 44.)					
33. Is this the number for a business, an institution or a private home? Private home <input type="radio"/> Both home and business <input type="radio"/> → Go to 36 Business, institution or other non residence <input type="radio"/>								
37. INTERVIEWER: • Enter answers for items 45 through 48 for each person recorded in item 42. Refer to Interviewer Reference Card for instructions and codes. • Then go to item 60.			43.	44.	45.	46. What is .....'s marital status?	47.	48. What is .....'s relationship to (Head of Family)?
Page	Line	Names of Household Members	Sel #	Age	Sex			
	1	Given name _____ Surname _____						<input type="checkbox"/> If '0', specify
	2	Given name _____ Surname _____						<input type="checkbox"/> If '0', specify
	3	Given name _____ Surname _____						<input type="checkbox"/> If '0', specify
	4	Given name _____ Surname _____						<input type="checkbox"/> If '0', specify
	5	Given name _____ Surname _____						<input type="checkbox"/> If '0', specify
	6	Given name _____ Surname _____						<input type="checkbox"/> If '0', specify
	7	Given name _____ Surname _____						<input type="checkbox"/> If '0', specify
	8	Given name _____ Surname _____						<input type="checkbox"/> If '0', specify
60. INTERVIEWER: Enter Page Line no. of person giving the above information. → 7								
61. Are there any persons away from this household attending school, visiting, travelling or in the hospital who USUALLY live there? Yes <input type="radio"/> → Enter names and complete items 44 through 48 No <input type="radio"/>								
62. Does anyone else live there, such as other relatives, roomers, boarders or employees? Yes <input type="radio"/> → Enter names and complete items 44 through 48 No <input type="radio"/>								
63. INTERVIEWER: • In item 43 number the persons 15 years of age and over in order from oldest to youngest. • Enter number of eligible household members 8								
64. INTERVIEWER: • Determine the selected person by referring to the Selection Grid. • In item 43 circle the selected person number and enter Page-Line no. 9								
SELECTION GRID LABEL								
A = Eligible household members B = Selection number								
65. The person I am to interview is (read name) (Is he/she there?) Yes <input type="radio"/> → Go to form GSS 4-2 No <input type="radio"/> → Set up appointment and enter details in item 16.								



Statistics Canada Statistique Canada

Interviewer's Name

1: - - Telephone Number

5: Label Identification Number

Page - Line Number

1 Type

GSS 4-2

Confidential when completed

GENERAL SOCIAL SURVEY

EDUCATION AND WORK

QUESTIONNAIRE

AGES 15 YEARS AND OVER

A SECTION A: Education Screen											
<p>A1. INTERVIEWER: Repeat the introduction below if selected respondent is different from household respondent.</p> <p>Hello, I'm from Statistics Canada. I'm calling you for a survey on education, work and retirement.</p> <p>All the information we collect is kept confidential. While your participation is voluntary, it is essential if the survey results are to be accurate.</p>											
<p>A8. Have you had any further schooling beyond elementary/high school?</p> <p>Yes 1 <input type="radio"/> Go to A10 No 2 <input type="radio"/></p>											
<p>A9. Are you presently working towards elementary or high school graduation?</p> <p>Yes 3 <input type="radio"/> Go to B5 No 4 <input type="radio"/> Go to C1</p>											
<p>A10. Have you ever taken any university, college or CEGEP level course in biology, chemistry or physics?</p> <p>Yes 5 <input type="radio"/> No 6 <input type="radio"/></p>											
<p>A2. Now I'd like to ask you some questions about your education.</p> <p>A3. How many years of elementary and high school education have you successfully completed?</p> <p>No schooling 01 <input type="radio"/> Go to E1 One to five years 02 <input type="radio"/> Go to A8 Six 03 <input type="radio"/> Go to A8 Seven 04 <input type="radio"/> Go to A8 Eight 05 <input type="radio"/> Go to A8 Nine 06 <input type="radio"/> Go to A7 Ten 07 <input type="radio"/> Go to A7 Eleven 08 <input type="radio"/> Twelve 09 <input type="radio"/> Thirteen 10 <input type="radio"/></p>											
<p>A4. Have you graduated from high school?</p> <p>Yes 1 <input type="radio"/> No 2 <input type="radio"/> Go to A7</p>											
<p>A5. In high school, did you take a course in ...</p> <table style="margin-left: 100px;"> <tr> <td>Yes</td> <td>No</td> </tr> <tr> <td>a) Mathematics?</td> <td>2 <input type="radio"/> 3 <input type="radio"/></td> </tr> <tr> <td>b) Chemistry?</td> <td>4 <input type="radio"/> 5 <input type="radio"/></td> </tr> <tr> <td>c) Geography?</td> <td>6 <input type="radio"/> 7 <input type="radio"/></td> </tr> <tr> <td>d) Physics?</td> <td>8 <input type="radio"/> 9 <input type="radio"/></td> </tr> </table>		Yes	No	a) Mathematics?	2 <input type="radio"/> 3 <input type="radio"/>	b) Chemistry?	4 <input type="radio"/> 5 <input type="radio"/>	c) Geography?	6 <input type="radio"/> 7 <input type="radio"/>	d) Physics?	8 <input type="radio"/> 9 <input type="radio"/>
Yes	No										
a) Mathematics?	2 <input type="radio"/> 3 <input type="radio"/>										
b) Chemistry?	4 <input type="radio"/> 5 <input type="radio"/>										
c) Geography?	6 <input type="radio"/> 7 <input type="radio"/>										
d) Physics?	8 <input type="radio"/> 9 <input type="radio"/>										
<p>A6. Have you had any further schooling beyond elementary/high school?</p> <p>Yes 1 <input type="radio"/> Go to A10 No 2 <input type="radio"/> Go to C1</p>											
<p>A7. In high school, did you take a course in ...</p> <table style="margin-left: 100px;"> <tr> <td>Yes</td> <td>No</td> </tr> <tr> <td>a) Mathematics?</td> <td>2 <input type="radio"/> 3 <input type="radio"/></td> </tr> <tr> <td>b) Chemistry?</td> <td>4 <input type="radio"/> 5 <input type="radio"/></td> </tr> <tr> <td>c) Geography?</td> <td>6 <input type="radio"/> 7 <input type="radio"/></td> </tr> <tr> <td>d) Physics?</td> <td>8 <input type="radio"/> 9 <input type="radio"/></td> </tr> </table>		Yes	No	a) Mathematics?	2 <input type="radio"/> 3 <input type="radio"/>	b) Chemistry?	4 <input type="radio"/> 5 <input type="radio"/>	c) Geography?	6 <input type="radio"/> 7 <input type="radio"/>	d) Physics?	8 <input type="radio"/> 9 <input type="radio"/>
Yes	No										
a) Mathematics?	2 <input type="radio"/> 3 <input type="radio"/>										
b) Chemistry?	4 <input type="radio"/> 5 <input type="radio"/>										
c) Geography?	6 <input type="radio"/> 7 <input type="radio"/>										
d) Physics?	8 <input type="radio"/> 9 <input type="radio"/>										
<p>A11. What is the highest level of education that you have attained? (Mark one only)</p> <p>Masters or earned doctorate 1 <input type="radio"/> Go to A15 Bachelor or undergraduate degree, or teacher's college 2 <input type="radio"/> Go to A15 Diploma or certificate from community college, CEGEP or nursing school 3 <input type="radio"/> Go to A15 Diploma or certificate from trade, technical or vocational school, or business college 4 <input type="radio"/> Go to A15 Some university 5 <input type="radio"/> Some community college, CEGEP or nursing school 6 <input type="radio"/> Some trade, technical or vocational school, or business college 7 <input type="radio"/> Other 8 <input type="radio"/> ↓ (Specify) _____ _____</p>											
<p>A12. When you took courses at university/college/trade school, were you working towards a degree, diploma or certificate?</p> <p>Yes 1 <input type="radio"/> No 2 <input type="radio"/> Go to A14</p>											
<p>A13. Are you still working towards your degree, diploma or certificate?</p> <p>Yes 3 <input type="radio"/> Go to B1 No 4 <input type="radio"/></p>											

<p>A14. What is the highest degree, diploma or certificate that you have completed? (Mark one only)</p> <p>Masters or earned doctorate 1 <input type="radio"/></p> <p>Bachelor or undergraduate degree, or teacher's college 2 <input type="radio"/></p> <p>Diploma or certificate from community college, CEGEP or nursing school 3 <input type="radio"/></p> <p>Diploma or certificate from trade, technical or vocational school, or business college 4 <input type="radio"/></p> <p>High school diploma 5 <input type="radio"/> → Go to A17</p> <p>Less than high school diploma 6 <input type="radio"/> → Go to A17</p> <p>Other 7 <input type="radio"/> ↓ (Specify) [] [] [] [] [] [] [] [] [] [] [] [] [] []</p>	<p>SECTION B: Current Education</p> <p>B1. I now have a few questions to ask you about the educational program you are currently working on.</p> <p>B2. What degree, diploma or certificate are you working towards? (Mark one only)</p> <p>Masters or earned doctorate 1 <input type="radio"/></p> <p>Bachelor or undergraduate degree, or teacher's college 2 <input type="radio"/></p> <p>Diploma or certificate from community college, CEGEP or nursing school 3 <input type="radio"/></p> <p>Diploma or certificate from trade, technical or vocational school, or business college 4 <input type="radio"/></p> <p>Elementary/High school diploma 5 <input type="radio"/> → Go to B5</p> <p>Other 6 <input type="radio"/> ↓ (Specify) [] [] [] [] [] [] [] [] [] [] [] [] [] []</p>
<p>A15. What was the major field of study or specialization for your degree, diploma or certificate?</p> <p>[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []</p>	<p>B3. What is the major field of study or specialization for that degree/diploma/certificate?</p> <p>[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []</p>
<p>A16. What was your MAIN reason for choosing this field of study? Was it to prepare for first career, to change or improve career, to improve earnings, because of interest in subject, or for some other reason? (Mark one only)</p> <p>To prepare for first career 1 <input type="radio"/></p> <p>To change careers 2 <input type="radio"/></p> <p>To improve career 3 <input type="radio"/></p> <p>To improve earnings 4 <input type="radio"/></p> <p>Because of interest in subject 5 <input type="radio"/></p> <p>For some other reason 6 <input type="radio"/> ↓ (Specify) [] [] [] [] [] [] [] [] [] [] [] [] [] []</p>	<p>B4. What was your MAIN reason for choosing this field of study? Was it to prepare for first career, to change or improve career, to improve earnings, because of interest in subject, or for some other reason? (Mark one only)</p> <p>To prepare for first career 1 <input type="radio"/></p> <p>To change careers 2 <input type="radio"/></p> <p>To improve career 3 <input type="radio"/></p> <p>To improve earnings 4 <input type="radio"/></p> <p>Because of interest in subject 5 <input type="radio"/></p> <p>For some other reason 6 <input type="radio"/> ↓ (Specify) [] [] [] [] [] [] [] [] [] [] [] [] [] []</p>
<p>A17. Are you now working towards a different degree, diploma or certificate?</p> <p>Yes 7 <input type="radio"/></p> <p>No 8 <input type="radio"/> → Go to C1</p>	<p>B5. In the last 12 months did you take any courses for this program?</p> <p>Yes 7 <input type="radio"/></p> <p>No 8 <input type="radio"/> → Go to B7</p>

<p>B6. Were you mainly a full-time or a part-time student?</p> <p>Full-time 1 <input type="radio"/></p> <p>Part-time 2 <input type="radio"/></p>	<p>C5. In what year did you get the first job since completing the program?</p> <p>19 <input type="text"/></p>
<p>B7. In what year do you expect to complete the program leading to your degree/diploma/certificate?</p> <p>19 <input type="text"/></p>	<p>C6. For whom did you work at that job? (Name of business, government department or agency, or person)</p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>
<p>B8. What do you expect to do when you graduate from your current program?</p> <p>(Mark one only)</p> <p>Work at a new or first job 3 <input type="radio"/></p> <p>Go on to further education 4 <input type="radio"/></p> <p>Work at the same job 5 <input type="radio"/></p> <p>Don't know 6 <input type="radio"/></p> <p>Other 7 <input type="radio"/></p> <p style="text-align: center;">(Specify)</p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>	<p>C7. INTERVIEWER: Go to C9</p> <p>C8. For whom did you work the longest time during those 12 months? (Name of business, government department or agency, or person)</p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>
<p>B9. INTERVIEWER: Go to D1</p>	<p>C9. What kind of business, industry or service was this?</p>
<p>C SECTION C: After Education</p>	<p>(Give full description: e.g. paper box manufacturing, retail shoe store, municipal board of education)</p>
<p>C1. In what year did you complete your studies or stop taking courses?</p> <p>19 <input type="text"/></p>	<p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>
<p>C2. During the 12 months after you completed these studies, what best describes your MAIN activity? Were you mainly ...</p> <p>(Mark one only)</p> <p>Working at a job or business? 1 <input type="radio"/> → Go to C8</p> <p>Looking for work? 2 <input type="radio"/></p> <p>A student? 3 <input type="radio"/></p> <p>Keeping house? 4 <input type="radio"/></p> <p>Retired? 5 <input type="radio"/></p> <p>Other 6 <input type="radio"/></p> <p style="text-align: center;">(Specify)</p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>	<p>C10. What kind of work were you doing?</p> <p>(Give a full description: e.g. accounts clerk, dairy farmer, primary school teacher)</p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>
<p>C3. Did you have a job or were you self-employed at any time during those 12 months?</p> <p>Yes 7 <input type="radio"/> → Go to C8</p> <p>No 8 <input type="radio"/></p>	<p>C11. Was this work mostly full-time or part-time?</p>
<p>C4. Have you ever had a job since completing that program?</p> <p>Yes 1 <input type="radio"/></p> <p>No 2 <input type="radio"/> → Go to D1</p>	<p>Full-time 3 <input type="radio"/></p> <p>Part-time 4 <input type="radio"/></p> <p>Both equally 5 <input type="radio"/></p> <p>C12. How closely was that job related to your education? Was it ...</p> <p>closely related? 6 <input type="radio"/></p> <p>somewhat related? 7 <input type="radio"/></p> <p>not at all related? 8 <input type="radio"/></p>

D SECTION D: Before Education	
D1. For the next few questions, think back to the time when you started the studies for your degree/diploma/certificate.	
D2. In what year did you start your studies for this degree/diploma/certificate? 19 <input type="text"/>	
D3. At that time were you less than 15 years old? Yes 1 <input type="radio"/> → Go to E1 No 2 <input type="radio"/>	
D4. During the 12 months before you started these studies, what best describes your MAIN activity? Were you mainly ... (Mark one only) Working at a job or business? 3 <input type="radio"/> → Go to D10 Looking for work? 4 <input type="radio"/> A student? 5 <input type="radio"/> Keeping house? 6 <input type="radio"/> Retired? 7 <input type="radio"/> Other 8 <input type="radio"/> (Specify) <input type="text"/> <input type="text"/>	
D5. Before starting the program, had you ever held a full-time job for 6 months or more? (Exclude summer jobs) Yes 1 <input type="radio"/> No 2 <input type="radio"/> → Go to E1	
D6. How many months or years of total full-time work experience did you have before you started your program? 6 months to less than 1 year 3 <input type="radio"/> 1 to less than 3 years 4 <input type="radio"/> 3 to less than 5 years 5 <input type="radio"/> 5 to less than 7 years 6 <input type="radio"/> 7 years or more 7 <input type="radio"/>	
D7. Before starting your program, in what year did you last work at a full-time job that lasted six months or more? 19 <input type="text"/> Still working at it 99 <input type="radio"/> → Go to E1	
D8. For whom did you work at that job? (Name of business, government department or agency, or person) <input type="text"/> <input type="text"/> <input type="text"/>	
D9. INTERVIEWER: Go to D11.	
D10. For whom did you work the longest time during those 12 months? (Name of business, government department or agency, or person) <input type="text"/> <input type="text"/> <input type="text"/>	
D11. What kind of business, industry or service was this? (Give full description: e.g. paper box manufacturing, retail shoe store, municipal board of education) <input type="text"/> <input type="text"/> <input type="text"/>	
D12. What kind of work were you doing? (Give a full description: e.g. accounts clerk, dairy farmer, primary school teacher) <input type="text"/> <input type="text"/> <input type="text"/>	
8-4500-48.1	

E SECTION E: Future Education	E5. What would be your major field of study or specialization? _____
E1. In the next five years, do you plan to start an additional educational or training program? (Include part-time and full-time) Yes 1 <input type="radio"/> No 2 <input type="radio"/> → Go to E6 Don't know .. 3 <input type="radio"/> → Go to E6	E6. Now some general questions about certain aspects of your education.
E2. What is your MAIN reason for planning to do this? Is it to prepare for first career, to change or improve career, to improve earnings, because of interest in subject, or for some other reason? (Mark one only) To prepare for first career 4 <input type="radio"/> To change careers 5 <input type="radio"/> To improve career 6 <input type="radio"/> To improve earnings 7 <input type="radio"/> Because of interest in subject 8 <input type="radio"/> For some other reason 9 <input type="radio"/> (Specify) _____	E7. Have you ever completed an apprenticeship program? Yes 1 <input type="radio"/> No 2 <input type="radio"/> E8. Have you ever taken any courses on how to use computers? Yes 3 <input type="radio"/> No 4 <input type="radio"/>
E3. What degree, diploma or certificate do you eventually want to obtain? (Mark one only) Masters or earned doctorate 1 <input type="radio"/> → Go to E5 Bachelor or undergraduate degree, or teacher's college 2 <input type="radio"/> → Go to E5 Diploma or certificate from community college, CEGEP or nursing school 3 <input type="radio"/> → Go to E5 Diploma or certificate from trade, technical or vocational school, or business college 4 <input type="radio"/> → Go to E5 Elementary/High school diploma 5 <input type="radio"/> Not for degree, diploma, or certificate 6 <input type="radio"/> Undecided or don't know 7 <input type="radio"/> Other 8 <input type="radio"/> (Specify) _____	E9. Can you do anything on a computer, for example, play games, word processing or data entry? Yes 5 <input type="radio"/> No 6 <input type="radio"/> → Go to E11 E10. In the last 12 months, have you done any of the following on a computer? ... (Any computer) a) Played games? 01 <input type="radio"/> Yes 02 <input type="radio"/> No b) Word processing? 03 <input type="radio"/> Yes 04 <input type="radio"/> No c) Data entry? 05 <input type="radio"/> Yes 06 <input type="radio"/> No d) Record keeping? 07 <input type="radio"/> Yes 08 <input type="radio"/> No e) Data analysis? 09 <input type="radio"/> Yes 10 <input type="radio"/> No f) Written computer programs? 11 <input type="radio"/> Yes 12 <input type="radio"/> No g) Anything else? 13 <input type="radio"/> Yes 14 <input type="radio"/> No (Specify) _____
E4. INTERVIEWER: Go to E6	E11. Do you have a personal computer at home? Yes 1 <input type="radio"/> No 2 <input type="radio"/> → Go to F1
	E12. Do you personally use that computer? Yes 3 <input type="radio"/> No 4 <input type="radio"/> → Go to F1
	E13. How many hours per week do you normally use it? _____ hours

F SECTION F: Science and Technology

F1. There are lots of topics in the news. I am going to read you a short list of them and for each one I would like you to tell me if you are very interested, moderately interested, or not at all interested.

	Very interested	Moderately interested	Not at all interested	No opinion
a) Current affairs, including national and local events	01 <input type="radio"/>	02 <input type="radio"/>	03 <input type="radio"/>	04 <input type="radio"/>
b) Economic conditions and business issues	05 <input type="radio"/>	06 <input type="radio"/>	07 <input type="radio"/>	08 <input type="radio"/>
c) New inventions and technologies	09 <input type="radio"/>	10 <input type="radio"/>	11 <input type="radio"/>	12 <input type="radio"/>
d) Recent scientific discoveries	13 <input type="radio"/>	14 <input type="radio"/>	15 <input type="radio"/>	16 <input type="radio"/>

F2. I would like you to tell me how well informed you are about these topics. Are you very well informed, moderately informed, or poorly informed about ...

	Very well informed	Moderately informed	Poorly informed	No opinion
a) Current affairs, including national and local events	17 <input type="radio"/>	18 <input type="radio"/>	19 <input type="radio"/>	20 <input type="radio"/>
b) Economic conditions and business issues	21 <input type="radio"/>	22 <input type="radio"/>	23 <input type="radio"/>	24 <input type="radio"/>
c) New inventions and technologies	25 <input type="radio"/>	26 <input type="radio"/>	27 <input type="radio"/>	28 <input type="radio"/>
d) Recent scientific discoveries	29 <input type="radio"/>	30 <input type="radio"/>	31 <input type="radio"/>	32 <input type="radio"/>

F3. How often do you pay attention to programs about science and technology ...

	Regularly	Occasionally	Never
a) On television	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>
b) On radio	4 <input type="radio"/>	5 <input type="radio"/>	6 <input type="radio"/>

F4. How often do you read articles about science and technology in ...

	Regularly	Occasionally	Never
a) Newspapers	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>
b) Magazines	4 <input type="radio"/>	5 <input type="radio"/>	6 <input type="radio"/>

F5. Please tell me if you agree or disagree with the following statements.

	Is that somewhat or strongly?		
		Somewhat	Strongly
a) Science and technology are making our lives better	Agree	01 <input type="radio"/> → 02 <input type="radio"/>	03 <input type="radio"/>
	Disagree	04 <input type="radio"/> → 05 <input type="radio"/>	06 <input type="radio"/>
	No opinion	07 <input type="radio"/>	
b) Science and technology will make work more interesting	Agree	08 <input type="radio"/> → 09 <input type="radio"/>	10 <input type="radio"/>
	Disagree	11 <input type="radio"/> → 12 <input type="radio"/>	13 <input type="radio"/>
	No opinion	14 <input type="radio"/>	
c) On balance, computers and automation will create more jobs than they will eliminate	Agree	15 <input type="radio"/> → 16 <input type="radio"/>	17 <input type="radio"/>
	Disagree	18 <input type="radio"/> → 19 <input type="radio"/>	20 <input type="radio"/>
	No opinion	21 <input type="radio"/>	
d) Science makes our life change too fast	Agree	22 <input type="radio"/> → 23 <input type="radio"/>	24 <input type="radio"/>
	Disagree	25 <input type="radio"/> → 26 <input type="radio"/>	27 <input type="radio"/>
	No opinion	28 <input type="radio"/>	

F6. I'm going to read you a list of things governments spend money on. For each one, tell me if you think the government is spending too little, about the right amount, or too much.

	Too little	About the right amount	Too much	No opinion
a) Health care	01 <input type="radio"/>	02 <input type="radio"/>	03 <input type="radio"/>	04 <input type="radio"/>
b) Helping older people	05 <input type="radio"/>	06 <input type="radio"/>	07 <input type="radio"/>	08 <input type="radio"/>
c) Education	09 <input type="radio"/>	10 <input type="radio"/>	11 <input type="radio"/>	12 <input type="radio"/>
d) Helping the unemployed	13 <input type="radio"/>	14 <input type="radio"/>	15 <input type="radio"/>	16 <input type="radio"/>
e) Scientific research	17 <input type="radio"/>	18 <input type="radio"/>	19 <input type="radio"/>	20 <input type="radio"/>
f) Helping people on low incomes	21 <input type="radio"/>	22 <input type="radio"/>	23 <input type="radio"/>	24 <input type="radio"/>
g) Reducing pollution	25 <input type="radio"/>	26 <input type="radio"/>	27 <input type="radio"/>	28 <input type="radio"/>

G SECTION G: Work Screen

G1. Now some questions about your activities.

G2. During 1988, what best describes your MAIN activity? Were you mainly ...

(Mark one only)

Working at a job or business? 1 → Go to G9

Looking for work? 2

A student? 3

Keeping house? 4

Retired? 5

Other 6

(Specify)

G3. Did you have a job or were you self-employed at any time during 1988?

Yes 7 → Go to G9

No 8

G4. Did you do any work at a job or business last week?

Yes 1 → Go to H1

No 2

G5. Did you look for a job in the last four weeks?

Yes 3 → Go to L1

No 4

G6. During last week, what best describes your MAIN activity? Were you mainly ...

(Mark one only)

A student? 5 → Go to L7

Keeping house? 6 → Go to L4

Retired? 7 → Go to G8

Other 8

(Specify)

G7. INTERVIEWER: Go to L7

G8. Have you ever worked at a job or business?

Yes 1 → Go to K1

No 2 → Go to K36

G9. For how many weeks during 1988 did you do any work at a job or business?

(Include vacation, illness, strikes, lock-outs and maternity leave)

_____ weeks

G10. During those weeks, was the work mostly full-time or part-time?

Full-time 3

Part-time 4

Both equally 5

G11. During those weeks were you mainly ...

An employee working for someone else? 6 → Go to G14

Self-employed? 7

G12. During those weeks, did you have any paid employees?

Yes 8

No 9 → Go to G14

<p>G13. About how many employees did you have? (If range given, enter maximum)</p> <p><input type="text"/> employees</p>	<p>G21. Was this your main job last week?</p> <p>Yes 7 <input type="radio"/> No 8 <input type="radio"/> → Go to H2</p>
<p>G14. For whom did you work the longest time during 1988? (Name of business, government department or agency, or person)</p> <p><input type="text"/> <input type="text"/> <input type="text"/></p>	<p>G22. How many hours per week do you usually work at your:</p> <p>(main) job <input type="text"/> 1 <input type="text"/> other jobs <input type="text"/> 2 <input type="text"/></p> <p>G23. INTERVIEWER: Is total in G22 30 or more hours?</p> <p>Yes 3 <input type="radio"/> → Go to H11 No 4 <input type="radio"/></p>
<p>G15. What kind of business, industry or service was this? (Give full description: e.g. paper box manufacturing, retail shoe store, municipal board of education)</p> <p><input type="text"/> <input type="text"/> <input type="text"/></p>	<p>G24. Why do you usually work less than 30 hours per week? (Mark all that apply)</p> <p>Own illness or disability 1 <input type="radio"/> Personal or family responsibilities 2 <input type="radio"/> Going to school 3 <input type="radio"/> Could only find part-time work 4 <input type="radio"/> Did not want full-time work 5 <input type="radio"/> Full-time work under 30 hours per week 6 <input type="radio"/> Other 7 <input type="radio"/> ↓ (Specify) <input type="text"/> <input type="text"/> <input type="text"/></p>
<p>G16. What kind of work were you doing? (Give full description: e.g. accounts clerk, dairy farmer, primary school teacher)</p> <p><input type="text"/> <input type="text"/> <input type="text"/></p>	
<p>G17. Did you work for the same employer last week?</p> <p>Yes 1 <input type="radio"/> No 2 <input type="radio"/> → Go to G26</p>	<p>G25. INTERVIEWER: Go to H11</p>
<p>G18. Did you do the same kind of work last week?</p> <p>Yes 3 <input type="radio"/> → Go to G20 No 4 <input type="radio"/></p>	<p>G26. Did you do any work at a job or business last week?</p> <p>Yes 8 <input type="radio"/> → Go to H1 No 9 <input type="radio"/></p>
<p>G19. What kind of work were you doing last week? (Give full description: e.g. accounts clerk, dairy farmer, primary school teacher)</p> <p><input type="text"/> <input type="text"/> <input type="text"/></p>	<p>G27. Last week, did you have a job to which you expected to return?</p> <p>Yes 1 <input type="radio"/> → Go to G32 No 2 <input type="radio"/></p> <p>G28. Did you look for a job in the last four weeks?</p> <p>Yes 3 <input type="radio"/> → Go to L1 No 4 <input type="radio"/></p>
<p>G20. Was this the only job at which you worked last week?</p> <p>Yes 5 <input type="radio"/> → Go to G22 No 6 <input type="radio"/></p>	<p>G29. Was this because you believed no jobs were available?</p> <p>Yes 5 <input type="radio"/> → Go to L2 No 6 <input type="radio"/></p>

<p>G30. During last week, what best describes your MAIN activity? Were you mainly ... <i>(Mark one only)</i></p> <p>A student? 1 <input type="radio"/> → Go to L7</p> <p>Keeping house? 2 <input type="radio"/> → Go to L4</p> <p>Retired? 3 <input type="radio"/> → Go to K1</p> <p>Other 4 <input type="radio"/> ↓ <i>(Specify)</i></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>		<p>SECTION H: Employed</p> <p>H1. Did you have more than one job last week?</p> <p>Yes 1 <input type="radio"/> No 2 <input type="radio"/></p> <p>H2. How many hours per week do you usually work at your:</p> <p>(main) job? <input type="text"/> 3 <input type="text"/> other jobs? <input type="text"/> 4 <input type="text"/></p> <p>H3. INTERVIEWER: Is total in H2 30 or more hours?</p> <p>Yes 5 <input type="radio"/> → Go to H5 No 6 <input type="radio"/></p>
<p>G31. INTERVIEWER: Go to L7</p> <p>G32. Why did you not work at this job last week? <i>(Mark one only)</i></p> <p>Own illness or disability 01 <input type="radio"/> → Go to G34</p> <p>Vacation 02 <input type="radio"/> → Go to G34</p> <p>Maternity leave 03 <input type="radio"/> → Go to G34</p> <p>Personal or family responsibilities 04 <input type="radio"/> → Go to G34</p> <p>Layoff, expects to return <i>(paid workers only)</i> 05 <input type="radio"/> → Go to G34</p> <p>Labour dispute <i>(strike or lockout)</i> 06 <input type="radio"/> → Go to G34</p> <p>Bad weather 07 <input type="radio"/> → Go to G34</p> <p>Seasonal business <i>(exclude paid workers)</i> 08 <input type="radio"/> → Go to G34</p> <p>New job to start in future 09 <input type="radio"/></p> <p>Other 10 <input type="radio"/> ↓ <i>(Specify)</i></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>		<p>H4. Why do you usually work less than 30 hours per week? <i>(Mark all that apply)</i></p> <p>Own illness or disability 1 <input type="radio"/> Personal or family responsibilities 2 <input type="radio"/> Going to school 3 <input type="radio"/> Could only find part-time work 4 <input type="radio"/> Did not want full-time work 5 <input type="radio"/> Full-time work under 30 hours per week 6 <input type="radio"/> Other 7 <input type="radio"/> ↓ <i>(Specify)</i></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>
<p>G33. INTERVIEWER: Go to L7</p> <p>G34. How long ago did you last work at this job?</p> <p><input type="text"/> weeks</p> <p>G35. In how many weeks do you expect to return to this job?</p> <p><input type="text"/> weeks</p> <p>Don't know 98 <input type="radio"/></p>		<p>H5. Are you mainly ... <i>(main job)</i></p> <p>An employee working for someone else? 8 <input type="radio"/> → Go to H8</p> <p>Self-employed? 9 <input type="radio"/></p> <p>H6. Last week, did you have any paid employees?</p> <p>Yes 1 <input type="radio"/> No 2 <input type="radio"/> → Go to H8</p> <p>H7. About how many employees did you have? <i>(If range given, enter maximum)</i></p> <p><input type="text"/> employees</p> <p>H8. Who was your employer last week? (main job) <i>(Name of business, government department or agency, or person)</i></p> <p>Same employer as in 1988 <i>(Same as in G14)</i> 3 <input type="radio"/> → Go to H10</p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>

<p>H9. What kind of business, industry or service was this? <small>(Give full description: e.g. paper box manufacturing, retail shoe store, municipal board of education)</small></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>	<p>H18. In total, about how many people work in your business/company at all its locations?</p> <p>Less than 20 1 <input type="radio"/> Between 20 and 99 2 <input type="radio"/> Between 100 and 499 3 <input type="radio"/> More than 500 people 4 <input type="radio"/></p>
<p>H10. What kind of work were you doing? <small>(Give a full description: e.g. accounts clerk, dairy farmer, primary school teacher)</small></p> <p>Same duties as in 1988 <small>(Same as in G16)</small> 4 <input type="radio"/></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p>	<p>H19. INTERVIEWER: Go to H29</p> <p>H20. Would you prefer to have a permanent job?</p> <p>Yes 5 <input type="radio"/> No 6 <input type="radio"/></p>
<p>H11. Are you satisfied or dissatisfied with your (main) job?</p> <p>Is that somewhat or very?</p> <p>Satisfied 1 <input type="radio"/> → 2 <input type="radio"/> 3 <input type="radio"/> Dissatisfied 4 <input type="radio"/> → 5 <input type="radio"/> 6 <input type="radio"/> No opinion 7 <input type="radio"/></p>	<p>H21. Do you directly supervise any people?</p> <p>Yes 7 <input type="radio"/> No 8 <input type="radio"/> → Go to H24</p> <p>H22. Last week, how many people did you directly supervise?</p> <p><input type="text"/> people</p>
<p>H12. In what year did you start working for this business/company?</p> <p>19 <input type="text"/></p>	<p>H23. How much of your working time do you spend supervising others? Would you say ...</p> <p>less than a quarter? 1 <input type="radio"/> between a quarter and a half? 2 <input type="radio"/> more than a half? 3 <input type="radio"/></p>
<p>H13. How many months in the year do you normally work at your (main) job? <small>(Include vacation, illness, strikes, lock-outs and maternity leave)</small></p> <p><input type="text"/> months</p>	<p>H24. In total, about how many people work in your business/company at all its locations?</p> <p>Less than 20 4 <input type="radio"/> Between 20 and 99 5 <input type="radio"/> Between 100 and 499 6 <input type="radio"/> More than 500 people 7 <input type="radio"/></p>
<p>H14. Is your (main) job permanent? That is, a job without a specific end date.</p> <p>Yes 1 <input type="radio"/> → Go to H21 No 2 <input type="radio"/> → Go to H20 Self-employed 3 <input type="radio"/></p>	<p>H25. Which of the following best describes the work you do? Is it managerial, supervisory or neither?</p> <p>Managerial 1 <input type="radio"/> Supervisory 2 <input type="radio"/> → Go to H29 Neither 3 <input type="radio"/> → Go to H29</p>
<p>H15. Do you directly supervise any people?</p> <p>Yes 4 <input type="radio"/> No 5 <input type="radio"/> → Go to H18</p>	<p>H26. Would you say that you are in a top, upper, middle or lower management position?</p> <p>Top 4 <input type="radio"/> Upper 5 <input type="radio"/> Middle 6 <input type="radio"/> Lower 7 <input type="radio"/></p>
<p>H16. Last week, how many people did you directly supervise?</p> <p><input type="text"/> people</p>	<p>H27. Do you take part in planning the future business activities of ...</p> <p>the entire business/company? 1 <input type="radio"/> only a part of it? 2 <input type="radio"/> not involved in planning 3 <input type="radio"/> → Go to H29</p>
<p>H17. How much of your working time do you spend supervising others? Would you say ...</p> <p>less than a quarter? 6 <input type="radio"/> between a quarter and a half? 7 <input type="radio"/> more than a half? 8 <input type="radio"/></p>	<p>H28. How much of your working time do you spend on planning future business activities of your company? Is it ...</p> <p>less than a quarter? 4 <input type="radio"/> between a quarter and a half? 5 <input type="radio"/> more than a half? 6 <input type="radio"/></p>

H29. I'd like to ask for your opinions about your current job. Do you agree or disagree with the following statements?

Is that somewhat or strongly?			
		Somewhat	Strongly
a) The physical surroundings at your work are pleasant	Agree 01 <input type="radio"/> 02 <input type="radio"/>	03 <input type="radio"/>	04 <input type="radio"/>
	Disagree ... 04 <input type="radio"/> 05 <input type="radio"/>	06 <input type="radio"/>	07 <input type="radio"/>
b) There is a lot of freedom to decide how to do your work	Agree 08 <input type="radio"/> 09 <input type="radio"/>	10 <input type="radio"/>	11 <input type="radio"/>
	Disagree ... 11 <input type="radio"/> 12 <input type="radio"/>	13 <input type="radio"/>	14 <input type="radio"/>
c) You do the same things over and over	Agree 15 <input type="radio"/> 16 <input type="radio"/>	17 <input type="radio"/>	18 <input type="radio"/>
	Disagree ... 18 <input type="radio"/> 19 <input type="radio"/>	20 <input type="radio"/>	21 <input type="radio"/>
d) Your job requires a high level of skill	Agree 22 <input type="radio"/> 23 <input type="radio"/>	24 <input type="radio"/>	25 <input type="radio"/>
	Disagree ... 25 <input type="radio"/> 26 <input type="radio"/>	27 <input type="radio"/>	28 <input type="radio"/>
e) The pay is good	Agree 29 <input type="radio"/> 30 <input type="radio"/>	31 <input type="radio"/>	32 <input type="radio"/>
	Disagree ... 32 <input type="radio"/> 33 <input type="radio"/>	34 <input type="radio"/>	35 <input type="radio"/>
f) Your chances for promotion or career development are good	Agree 36 <input type="radio"/> 37 <input type="radio"/>	38 <input type="radio"/>	39 <input type="radio"/>
	Disagree ... 39 <input type="radio"/> 40 <input type="radio"/>	41 <input type="radio"/>	42 <input type="radio"/>

H30. Does your business/company provide you with ...	H35. In the last five years, how much has your work been affected by the introduction of computers or automated technology? Would you say ...
Yes <input type="radio"/> No <input type="radio"/> Don't know <input type="radio"/>	
a) a pension plan? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/>	greatly? 6 <input type="radio"/>
b) medical insurance? 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/>	somewhat? 7 <input type="radio"/>
c) a dental plan? ... 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/>	hardly? 8 <input type="radio"/> Go to H39
	not at all? 9 <input type="radio"/> Go to H39
H31. Does your business/company provide paid maternity leave?	H36. In the last five years, has the level of skill required to perform your work increased, decreased, or stayed the same as a result of the introduction of computers or automated technology?
Yes 1 <input type="radio"/> No 2 <input type="radio"/> Don't know 3 <input type="radio"/>	Increased 1 <input type="radio"/> Decreased 2 <input type="radio"/> Stayed the same 3 <input type="radio"/>
H32. In the last five years, how many times have you received a promotion from your current business/company? (Since started if less than five years ago)	H37. In the last five years, has the job security increased, decreased, or stayed the same as a result of the introduction of computers or automated technology?
promotions	Increased 4 <input type="radio"/> Decreased 5 <input type="radio"/> Stayed the same 6 <input type="radio"/>
H33. Do you use computers such as mainframes, personal computers or word processors in your job?	H38. Over the last five years, has your work become more interesting, less interesting, or stayed the same as a result of the introduction of computers or automated technology?
Yes 4 <input type="radio"/> No 5 <input type="radio"/> Go to H35	More interesting 7 <input type="radio"/> Less interesting 8 <input type="radio"/> Stayed the same 9 <input type="radio"/>
H34. How many hours per week do you normally use this equipment? (Include work done at home for job)	
hours	

<p>H39. How closely is your job related to your education? Is it . . .</p> <p>closely related? 1 <input type="radio"/></p> <p>somewhat related? 2 <input type="radio"/></p> <p>not related at all? 3 <input type="radio"/></p>	<p>H44. Now I will ask you some questions about your work activities during the last five years, that is, since January 1984.</p>
<p>H40. What level of education is normally required for people who do your type of work? (Level before apprenticeship if applicable)</p> <p>Masters or earned doctorate 01 <input type="radio"/></p> <p>Bachelor or undergraduate degree, or teacher's college 02 <input type="radio"/></p> <p>Diploma or certificate from community college, CEGEP or nursing school 03 <input type="radio"/></p> <p>Diploma or certificate from trade, technical or vocational school, or business college 04 <input type="radio"/></p> <p>Some post-secondary 05 <input type="radio"/></p> <p>High school diploma 06 <input type="radio"/></p> <p>Less than high school diploma 07 <input type="radio"/></p> <p>No qualifications specified 08 <input type="radio"/></p> <p>Other 09 <input type="radio"/></p> <p style="text-align: center;">↓ (Specify)</p> <p>_____</p> <p>_____</p> <p>Don't know 10 <input type="radio"/></p>	<p>H45. During 1984, what best describes your MAIN activity? Were you mainly . . . (Mark one only)</p> <p>Working at a job or business? 1 <input type="radio"/> → Go to H47</p> <p>Looking for work? 2 <input type="radio"/></p> <p>A student? 3 <input type="radio"/></p> <p>Keeping house? 4 <input type="radio"/></p> <p>Retired? 5 <input type="radio"/></p> <p>Other 6 <input type="radio"/></p> <p style="text-align: center;">↓ (Specify)</p> <p>_____</p> <p>_____</p>
<p>H41. Considering your experience, education and training, do you feel that you are overqualified for your job?</p> <p>Yes 1 <input type="radio"/></p> <p>No 2 <input type="radio"/></p>	<p>H46. Did you have a job or were you self-employed at any time during 1984?</p> <p>Yes 7 <input type="radio"/></p> <p>No 8 <input type="radio"/> → Go to H51</p>
<p>H42. Do you think it is likely you will lose your job or be laid off in the next year?</p> <p>Yes 3 <input type="radio"/></p> <p>No 4 <input type="radio"/> → Go to H44</p>	<p>H47. For whom did you work the longest time during 1984? (Name of business, government department or agency, or person)</p> <p>Same employer as in 1988 (Same as in G14) 1 <input type="radio"/> → Go to H49</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p>H43. Do you think this will be because of the introduction of computers or automated technology?</p> <p>Yes 5 <input type="radio"/></p> <p>No 6 <input type="radio"/></p> <p>Don't know 7 <input type="radio"/></p>	<p>H48. What kind of business, industry or service was this? (Give full description: e.g. paper box manufacturing, retail shoe store, municipal board of education)</p> <p>_____</p> <p>_____</p> <p>_____</p>
	<p>H49. What kind of work were you doing in 1984? (Give a full description: e.g. accounts clerk, dairy farmer, primary school teacher)</p> <p>Same duties as in 1988 (Same as in G16) 2 <input type="radio"/></p> <p>_____</p> <p>_____</p> <p>_____</p>

H50. How closely was that job related to your education at that time? Was it . . .		SECTION K: Retired	K
closely related? 3 <input type="radio"/> somewhat related? 4 <input type="radio"/> not related at all? 5 <input type="radio"/>		K1. Are you satisfied or dissatisfied with your retirement? Is that somewhat or very? Somewhat Very Satisfied 1 <input type="radio"/> → 2 <input type="radio"/> 3 <input type="radio"/> Dissatisfied 4 <input type="radio"/> → 5 <input type="radio"/> 6 <input type="radio"/> No opinion 7 <input type="radio"/>	
H51. Did you lose a job between January 1984 and December 1988 for any reason?		K2. In what year did you retire? 19 <input type="text"/>	
Yes 6 <input type="radio"/> No 7 <input type="radio"/> → Go to H53		K3. For whom were you working when you retired? (Name of business, government department or agency, or person) Same employer as in 1988 (Same as in G14) 8 <input type="radio"/> → Go to K5 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
H52. Why did this happen? (Mark all that apply) An employer going out of business 1 <input type="radio"/> A plant closing or moving 2 <input type="radio"/> The introduction of new technology 3 <input type="radio"/> Reduction of staff 4 <input type="radio"/> Seasonal job 5 <input type="radio"/> Shortage of work 6 <input type="radio"/> Other 7 <input type="radio"/> (Specify) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		K4. What kind of business, industry or service was this? (Give full description: e.g. paper box manufacturing, retail shoe store, municipal board of education) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
H53. Between January 1984 and December 1988, how many different jobs did you have? By different jobs we mean different duties with the same employer, or different employers.		K5. What kind of work were you doing? (Give a full description: e.g. accounts clerk, dairy farmer, primary school teacher) Same duties as in 1988 (Same as in G16) 9 <input type="radio"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
H54. There were 60 months between January 1984 and December 1988. In how many of those months were you working at a job or business? (Include vacation, illness, strikes, lock-outs and maternity leave) 60 months 99 <input type="radio"/> → Go to H56 <input type="text"/> months		K6. How closely was that job related to your education at that time? Was it . . . closely related? 1 <input type="radio"/> somewhat related? 2 <input type="radio"/> not related at all? 3 <input type="radio"/>	
H55. In how many of the remaining months did you look for work? None 00 <input type="radio"/> <input type="text"/> months		K7. Did you retire because you had reached mandatory retirement age? Yes 4 <input type="radio"/> → Go to K9 No 5 <input type="radio"/>	
H56. Now some questions about your retirement plans.			
H57. At what age do you plan to retire?			
<input type="text"/> Don't know 11 <input type="radio"/> Don't intend to retire 22 <input type="radio"/>			
H58. Do you think that mandatory retirement is a good idea?			
Yes 3 <input type="radio"/> → At what age? <input type="text"/> No 4 <input type="radio"/>			
H59. INTERVIEWER: Go to M1			

K8. Did you retire . . .		Yes	No	K14. What is the main reason that you now enjoy life less? Is it . . . (Mark one only)	
a) Because your employer offered an early retirement incentive?		1 <input type="radio"/>	2 <input type="radio"/>	Your health? 6 <input type="radio"/>	
b) Because new technology was introduced?		3 <input type="radio"/>	4 <input type="radio"/>	Decrease in income? 7 <input type="radio"/>	
c) Because your health required it?		5 <input type="radio"/>	6 <input type="radio"/>	Less contact with people? 8 <input type="radio"/>	
d) Any other reason?		7 <input type="radio"/>	8 <input type="radio"/>	Other 9 <input type="radio"/>	
(Specify)				↓ (Specify)	
K9. Do you receive a pension or retirement benefits from any of your former employers?		K15. Do you think mandatory retirement is a good idea?			
Yes	1 <input type="radio"/>	Yes 1 <input type="radio"/>		At what age? <input type="radio"/>	
No	2 <input type="radio"/>	No 2 <input type="radio"/>			
K10. Are these benefits adjusted for changes in the cost of living?		K16. Now I will ask you some questions about your work activities during the last five years, that is, since January 1984.			
Yes	3 <input type="radio"/>				
No	4 <input type="radio"/>				
Don't know	5 <input type="radio"/>	K17. Between January 1984 and December 1988, did you do any work at a job or business?			
More	6 <input type="radio"/>	Yes 3 <input type="radio"/>			
Less	7 <input type="radio"/>	No 4 <input type="radio"/>		Go to K37	
About the same	8 <input type="radio"/>	Go to K14			
K11. Compared to the year before you retired, do you now enjoy life more, less or about the same?		K18. In 1988, how many days did you do any work for pay? (Since retired if retired in 1988)			
More	6 <input type="radio"/>	None 000 <input type="radio"/>			
Less	7 <input type="radio"/>	Go to K14			
About the same	8 <input type="radio"/>	Go to K15			
K12. What is the main reason that you now enjoy life more? Is it . . . (Mark one only)		K19. During 1984, what best describes your MAIN activity? Were you mainly . . . (Mark one only)			
More leisure time?	1 <input type="radio"/>	Working at a job or business? 1 <input type="radio"/>		Go to K25	
More travel?	2 <input type="radio"/>	Looking for work? 2 <input type="radio"/>			
More time with family?	3 <input type="radio"/>	A student? 3 <input type="radio"/>			
More time for voluntary activities?	4 <input type="radio"/>	Keeping house? 4 <input type="radio"/>			
Other	5 <input type="radio"/>	Retired? 5 <input type="radio"/>			
(Specify)				6 <input type="radio"/>	
				↓ (Specify)	
K13. INTERVIEWER: Go to K15		K20. Did you have a job or were you self-employed at any time during 1984?			
Yes	7 <input type="radio"/>	Yes 7 <input type="radio"/>		Go to K25	
No	8 <input type="radio"/>	No 8 <input type="radio"/>			
K21. Did you work at any time between January 1984 and December 1988?		K22. Did you work at any time between January 1984 and December 1988?			
Yes	1 <input type="radio"/>	Yes 1 <input type="radio"/>		Go to K28	
No	2 <input type="radio"/>	No 2 <input type="radio"/>			

K22. Did you look for work in any month between January 1984 and December 1988?		K30. Why did this happen? (Mark all that apply)	
Yes 3 <input type="radio"/> No 4 <input type="radio"/> → Go to M1		An employer going out of business 3 <input type="radio"/> A plant closing or moving 4 <input type="radio"/> The introduction of new technology 5 <input type="radio"/> Reduction of staff 6 <input type="radio"/> Seasonal job 7 <input type="radio"/> Shortage of work 8 <input type="radio"/> Other 9 <input type="radio"/> ↓ (Specify) <input type="text"/> <input type="text"/> <input type="text"/>	
K23. There were 60 months between January 1984 and December 1988. In how many of those months did you look for work?		K31. Between January 1984 and December 1988, how many different jobs did you have? By different jobs we mean different duties with the same employer, or different employers.	
<input type="text"/> months K24. INTERVIEWER: Go to M1		<input type="text"/> jobs	
K25. For whom did you work the longest time during 1984?		K32. There were 60 months between January 1984 and December 1988. In how many of those months were you working at a job or business?	
(Name of business, government department or agency, or person) Same employer as retired from (Same as in K3) 5 <input type="radio"/> → Go to K27		(Include vacation, illness, strikes, lock-outs and maternity leave) <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="text"/> <input type="text"/> <input type="text"/>		60 months 99 <input type="radio"/> → Go to M1 <input type="text"/> months	
K26. What kind of business, industry or service was this?		K33. Did you look for work in any of the remaining months?	
(Give full description: e.g. paper box manufacturing, retail shoe store, municipal board of education) <input type="text"/> <input type="text"/> <input type="text"/>		Yes 1 <input type="radio"/> No 2 <input type="radio"/> → Go to M1	
K27. What kind of work were you doing in 1984?		K34. In how many of those remaining months did you look for work?	
(Give a full description: e.g. accounts clerk, dairy farmer, primary school teacher) Same duties as retired from (Same as in K5) 6 <input type="radio"/>		<input type="text"/> months	
<input type="text"/> <input type="text"/> <input type="text"/>		K35. INTERVIEWER: Go to M1	
K28. How closely was that job related to your education at that time? Was it ...		K36. Do you think mandatory retirement is a good idea?	
closely related? 7 <input type="radio"/> somewhat related? 8 <input type="radio"/> not related at all? 9 <input type="radio"/>		Yes 3 <input type="radio"/> → At what age? <input type="text"/> No 4 <input type="radio"/>	
K29. Other than the job you retired from, did you lose a job between January 1984 and December 1988 for any reason?		K37. During 1984, what best describes your MAIN activity? Were you mainly ... (Mark one only)	
Yes 1 <input type="radio"/> No 2 <input type="radio"/> → Go to K31		Looking for work? 5 <input type="radio"/> → Go to K39 A student? 6 <input type="radio"/> Keeping house? 7 <input type="radio"/> Retired? 8 <input type="radio"/> Other 9 <input type="radio"/> ↓ (Specify) <input type="text"/> <input type="text"/> <input type="text"/>	

K38. Did you look for work in any month between January 1984 and December 1988?		L7. Now I will ask you some questions about your work activities during the last five years, that is, since January 1984.	
Yes	1 <input type="radio"/>		
No	2 <input type="radio"/>	→ Go to M1	
K39. There were 60 months between January 1984 and December 1988. In how many of those months did you look for work?			
_____ months			
K40. INTERVIEWER: Go to M1			
SECTION L: Other persons			
L1. Were you mainly looking for a full-time or part-time job?			
Full-time	1 <input type="radio"/>		
Part-time	2 <input type="radio"/>		
Either	3 <input type="radio"/>		
L2. What are the chances that you will find a job in the next six months? Are they ...			
Very good?	4 <input type="radio"/>		
Good?	5 <input type="radio"/>		
Not good?	6 <input type="radio"/>		
Not very good?	7 <input type="radio"/>		
Has already found work	8 <input type="radio"/>		
L3. INTERVIEWER: Go to L7			
L4. Are you satisfied or dissatisfied to be keeping house as your main activity?			
Is that somewhat or very?			
Somewhat		Very	
Satisfied	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>
Dissatisfied	4 <input type="radio"/>	5 <input type="radio"/>	6 <input type="radio"/>
No opinion	7 <input type="radio"/>		
L5. Would you like to have a paying job now?			
Yes	8 <input type="radio"/>		
No	9 <input type="radio"/>	→ Go to L7	
L6. Do you not have a paying job ...			
		Yes	No
			N/A
a) Because jobs are unavailable or hard to find?	01 <input type="radio"/>	02 <input type="radio"/>	
b) Because you lack skills or qualifications?	03 <input type="radio"/>	04 <input type="radio"/>	
c) Because of your own illness or disability?	05 <input type="radio"/>	06 <input type="radio"/>	
d) Because you can't find suitable child care?	07 <input type="radio"/>	08 <input type="radio"/>	09 <input type="radio"/>
e) Because you prefer to stay home with children?	10 <input type="radio"/>	11 <input type="radio"/>	12 <input type="radio"/>
f) Because your spouse wants you to stay home?	13 <input type="radio"/>	14 <input type="radio"/>	15 <input type="radio"/>
g) Because of personal or family responsibilities?	16 <input type="radio"/>	17 <input type="radio"/>	18 <input type="radio"/>
h) Any other reasons?	19 <input type="radio"/>	20 <input type="radio"/>	
		↓ (Specify)	
		_____ months	
L13. INTERVIEWER: Go to L27			
L14. What kind of work did you usually do?			
(Give a full description: e.g. accounts clerk, dairy farmer, primary school teacher)		_____	

L15. INTERVIEWER: Go to L19			
L16. For whom did you work the longest time during 1984?			
(Name of business, government department or agency, or person)			
Same employer as in 1988			
(Same as in G14)		5 <input type="radio"/>	→ Go to L18
		_____ months	
		_____ months	
		_____ months	

<p>L17. What kind of business, industry or service was this? (Give full description: e.g. paper box manufacturing, retail shoe store, municipal board of education)</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>L23. Between January 1984 and December 1988, how many different jobs did you have? By different jobs we mean different duties with the same employer, or different employers.</p> <p>_____ jobs</p>
<p>L18. What kind of work were you doing in 1984? (Give a full description: e.g. accounts clerk, dairy farmer, primary school teacher)</p> <p>Same duties as in 1988 (Same as in G16) 6 <input type="radio"/></p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>L24. There were 60 months between January 1984 and December 1988. In how many of those months were you working at a job or business? (Include vacation, illness, strikes, lock-outs and maternity leave)</p> <p>60 months 88 <input type="radio"/> → Go to L27</p> <p>_____ months</p>
<p>L19. How closely was that job related to your education at that time? Was it ...</p> <p>closely related? 7 <input type="radio"/></p> <p>somewhat related? 8 <input type="radio"/></p> <p>not related at all? 9 <input type="radio"/></p>	<p>L25. Did you look for work in any of the remaining months?</p> <p>Yes 1 <input type="radio"/></p> <p>No 2 <input type="radio"/> → Go to L27</p>
<p>L20. Considering your experience, education and training, do you feel that you have been overqualified for most of your jobs?</p> <p>Yes 1 <input type="radio"/></p> <p>No 2 <input type="radio"/></p>	<p>L27. Do you intend to work at a job in the future?</p> <p>Yes 3 <input type="radio"/></p> <p>No 4 <input type="radio"/> → Go to L29</p>
<p>L21. Did you lose a job between January 1984 and December 1988 for any reason?</p> <p>Yes 3 <input type="radio"/></p> <p>No 4 <input type="radio"/> → Go to L23</p>	<p>L28. At what age do you plan to retire?</p> <p>_____</p> <p>Don't know 11 <input type="radio"/></p> <p>Don't intend to retire 22 <input type="radio"/></p>
<p>L22. Why did this happen? (Mark all that apply)</p> <p>An employer going out of business 1 <input type="radio"/></p> <p>A plant closing or moving 2 <input type="radio"/></p> <p>The introduction of new technology 3 <input type="radio"/></p> <p>Reduction of staff 4 <input type="radio"/></p> <p>Seasonal job 5 <input type="radio"/></p> <p>Shortage of work 6 <input type="radio"/></p> <p>Other 7 <input type="radio"/></p> <p style="text-align: center;">(Specify)</p> <p>_____</p> <p>_____</p>	<p>L29. Do you think that mandatory retirement is a good idea?</p> <p>Yes 3 <input type="radio"/> → At what age? _____</p> <p>No 4 <input type="radio"/></p>

M SECTION M: Organizations

M1. Now I have a few questions about your involvement in associations, clubs or other groups. In the last 12 months, have you been involved in any ...

	Yes	No
a) Charitable, service or volunteer organization?	01 <input type="radio"/>	02 <input type="radio"/>
b) Neighbourhood, community or school-related association?	03 <input type="radio"/>	04 <input type="radio"/>
c) Religious or church-related group, not counting time at church services?	05 <input type="radio"/>	06 <input type="radio"/>
d) Social, cultural or ethnic group?	07 <input type="radio"/>	08 <input type="radio"/>
e) Sports or athletic association?	09 <input type="radio"/>	10 <input type="radio"/>
f) Public interest group, concerned with issues such as the environment or world peace?	11 <input type="radio"/>	12 <input type="radio"/>
g) Business, professional or other work-related organization?	13 <input type="radio"/>	14 <input type="radio"/>
h) Political organization?	15 <input type="radio"/>	16 <input type="radio"/>

M2. INTERVIEWER:

If all NO in M1 1 → Go to M4
Otherwise 2

M3. On average, what is the total number of hours you spend each month participating in all such organizations?

Zero 00
or
_____ hours

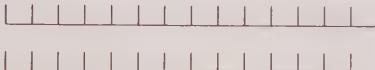
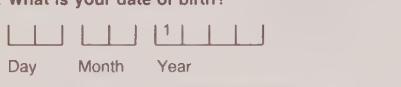
M4. Are you a member of a labour union?

Yes 3
No 4 → Go to N1

M5. On average, about how many hours do you spend each month on union activities?

Zero 00
or
_____ hours

N	SECTION N: Satisfaction				
N1. For this part of the survey I would like you to consider your life as it is now.					
N2. Would you describe yourself as ...					
	Very happy	Somewhat happy	Somewhat unhappy	Very unhappy	No opinion
	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
N3. I am going to ask you to rate certain areas of your life. Are you satisfied or dissatisfied with ...					
	Is that somewhat or very?				
		Somewhat	Very		
a) Your health?	Satisfied ..	01 <input type="radio"/> → 02 <input type="radio"/>	03 <input type="radio"/>		
	Dissatisfied	04 <input type="radio"/> → 05 <input type="radio"/>	06 <input type="radio"/>		
	No opinion ..	07 <input type="radio"/>			
b) Your education?	Satisfied ..	08 <input type="radio"/> → 09 <input type="radio"/>	10 <input type="radio"/>		
	Dissatisfied	11 <input type="radio"/> → 12 <input type="radio"/>	13 <input type="radio"/>		
	No opinion ..	14 <input type="radio"/>			
c) Your job or main activity? ...	Satisfied ..	15 <input type="radio"/> → 16 <input type="radio"/>	17 <input type="radio"/>		
	Dissatisfied	18 <input type="radio"/> → 19 <input type="radio"/>	20 <input type="radio"/>		
	No opinion ..	21 <input type="radio"/>			
d) The way you spend your other time?	Satisfied ..	22 <input type="radio"/> → 23 <input type="radio"/>	24 <input type="radio"/>		
	Dissatisfied	25 <input type="radio"/> → 26 <input type="radio"/>	27 <input type="radio"/>		
	No opinion ..	28 <input type="radio"/>			
e) Your finances?	Satisfied ..	29 <input type="radio"/> → 30 <input type="radio"/>	31 <input type="radio"/>		
	Dissatisfied	32 <input type="radio"/> → 33 <input type="radio"/>	34 <input type="radio"/>		
	No opinion ..	35 <input type="radio"/>			
f) Your housing?	Satisfied ..	36 <input type="radio"/> → 37 <input type="radio"/>	38 <input type="radio"/>		
	Dissatisfied	39 <input type="radio"/> → 40 <input type="radio"/>	41 <input type="radio"/>		
	No opinion ..	42 <input type="radio"/>			
g) Your spouse, living partner or single status?	Satisfied ..	43 <input type="radio"/> → 44 <input type="radio"/>	45 <input type="radio"/>		
	Dissatisfied	46 <input type="radio"/> → 47 <input type="radio"/>	48 <input type="radio"/>		
	No opinion ..	49 <input type="radio"/>			
h) Your relationship with friends and family members?	Satisfied ..	50 <input type="radio"/> → 51 <input type="radio"/>	52 <input type="radio"/>		
	Dissatisfied	53 <input type="radio"/> → 54 <input type="radio"/>	55 <input type="radio"/>		
	No opinion ..	56 <input type="radio"/>			
i) Yourself (self-esteem)?	Satisfied ..	57 <input type="radio"/> → 58 <input type="radio"/>	59 <input type="radio"/>		
	Dissatisfied	60 <input type="radio"/> → 61 <input type="radio"/>	62 <input type="radio"/>		
	No opinion ..	63 <input type="radio"/>			
N4. Using the same scale, how do you feel about your life as a whole right now? Are you satisfied or dissatisfied?					
	Is that somewhat or very?				
		Somewhat	Very		
	Satisfied ..	1 <input type="radio"/> → 2 <input type="radio"/>	3 <input type="radio"/>		
	Dissatisfied	4 <input type="radio"/> → 5 <input type="radio"/>	6 <input type="radio"/>		
	No opinion ..	7 <input type="radio"/>			

P SECTION P: Other classification		P10. Are you limited in the kind or amount of activity you can do at home, at work, or at school because of a long term condition or health problem?	
P1. Now a few general questions. P2. In what type of dwelling are you now living? Is it a ... Single detached house? 1 <input type="radio"/> Semi-detached or double (side-by-side)? 2 <input type="radio"/> Garden house, town house or row house? 3 <input type="radio"/> Duplex (one above the other)? 4 <input type="radio"/> Low-rise apartment (less than 5 stories)? 5 <input type="radio"/> High-rise apartment (5 or more stories)? 6 <input type="radio"/> Mobile home? 7 <input type="radio"/> Other 8 <input type="radio"/> (Specify) 		Yes 1 <input type="radio"/> No 2 <input type="radio"/> → Go to P13 P11. What is the main condition or health problem that limits you? 	
		P12. Are you completely unable to work at a job or business because of this condition or health problem? Yes 3 <input type="radio"/> No 4 <input type="radio"/> Not applicable 5 <input type="radio"/>	
P3. What is your postal code? Don't know 9 <input type="radio"/>		P13. In what country were you born? Canada 6 <input type="radio"/> → In which province or territory? 	
P4. Is this dwelling owned by a member of this household or is it rented? Owned ... 1 <input type="radio"/> Rented ... 2 <input type="radio"/>		P14. In what year did you first immigrate to Canada?  Canadian citizen by birth 8 <input type="radio"/>	
P5. How many telephones, including extensions, are there in your dwelling? One 3 <input type="radio"/> → Go to P10 Two or more 4 <input type="radio"/>		P15. What is your date of birth? 	
P6. Do all the telephones have the same number? Yes 5 <input type="radio"/> → Go to P10 No 6 <input type="radio"/>			
P7. How many different numbers are there? 			
P8. Are any of these numbers for business use only? Yes 7 <input type="radio"/> No 8 <input type="radio"/> → Go to P10			
P9. How many are for business use only? 			

P16. What language did you first speak in childhood? (Accept multiple response only if languages were used equally)			P19. Other than on special occasions, such as weddings, funerals or baptisms, how often did you attend services or meetings connected with your religion in the last 12 months? Was it ...		
Do you still understand that those language(s)?					
Yes No					
English	.....	1 <input type="radio"/>		At least once a week?	1 <input type="radio"/>
French	.....	2 <input type="radio"/> → 03 <input type="radio"/>	04 <input type="radio"/>	At least once a month?	2 <input type="radio"/>
Italian	.....	3 <input type="radio"/> → 05 <input type="radio"/>	06 <input type="radio"/>	A few times a year?	3 <input type="radio"/>
German	.....	4 <input type="radio"/> → 07 <input type="radio"/>	08 <input type="radio"/>	At least once a year?	4 <input type="radio"/>
Ukrainian	.....	5 <input type="radio"/> → 09 <input type="radio"/>	10 <input type="radio"/>	Less than once a year?	5 <input type="radio"/>
Other	.....	6 <input type="radio"/> → 11 <input type="radio"/>	12 <input type="radio"/>	Never?	6 <input type="radio"/>
↓ (Specify)					
P17. What language do you speak most often at home? (Accept multiple response only if languages are spoken equally)			P20. To which ethnic or cultural group do you or did your ancestors belong? Would it be ... (Accept multiple responses)		
English	.....	1 <input type="radio"/>	French?	.....	01 <input type="radio"/>
French	.....	2 <input type="radio"/>	English?	.....	02 <input type="radio"/>
Italian	.....	3 <input type="radio"/>	Irish?	.....	03 <input type="radio"/>
Chinese	.....	4 <input type="radio"/>	Scottish?	.....	04 <input type="radio"/>
German	.....	5 <input type="radio"/>	German?	.....	05 <input type="radio"/>
Other	.....	6 <input type="radio"/> ↓ (Specify)	Italian?	.....	06 <input type="radio"/>
			Ukrainian?	.....	07 <input type="radio"/>
			Other	.....	08 <input type="radio"/>
			↓ (Specify)		
			Canadian (Probe)	.....	09 <input type="radio"/>
			Don't know	.....	10 <input type="radio"/>
P18. What, if any, is your religion?			P21. What is your marital status? Is it ...		
No religion	.....	01 <input type="radio"/> → Go to P20	Married or living common law?	.....	1 <input type="radio"/>
Roman Catholic	.....	02 <input type="radio"/>	Single (never been married)?	2 <input type="radio"/> → Go to P26	
United Church	.....	03 <input type="radio"/>	Widow or widower?	3 <input type="radio"/> → Go to P26	
Anglican	.....	04 <input type="radio"/>	Separated or divorced?	4 <input type="radio"/> → Go to P26	
Presbyterian	.....	05 <input type="radio"/>			
Lutheran	.....	06 <input type="radio"/>			
Baptist	.....	07 <input type="radio"/>			
Eastern Orthodox	.....	08 <input type="radio"/>			
Jewish	.....	09 <input type="radio"/>			
Other	.....	10 <input type="radio"/> ↓ (Specify)			

<p>P22. What is the highest level of education your spouse attained? (Mark one only)</p> <p>Masters or earned doctorate 01 <input type="radio"/></p> <p>Bachelor or undergraduate degree, or teacher's college 02 <input type="radio"/></p> <p>Diploma or certificate from community college, CEGEP or nursing school 03 <input type="radio"/></p> <p>Diploma or certificate from trade, technical or vocational school, or business college 04 <input type="radio"/></p> <p>Some university 05 <input type="radio"/></p> <p>Some community college, CEGEP or nursing school 06 <input type="radio"/></p> <p>Some trade, technical or vocational school, or business college 07 <input type="radio"/></p> <p>Secondary/high school graduation 08 <input type="radio"/></p> <p>Some secondary/high school 09 <input type="radio"/></p> <p>Elementary school (some or completed) 10 <input type="radio"/></p> <p>Other 11 <input type="radio"/></p> <p style="text-align: right;">↓ (Specify)</p> <p>_____</p> <p>_____</p>	<p>P26. During 1988, did you personally receive income</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;"></td> <td style="width: 15%; text-align: center;">Yes</td> <td style="width: 15%; text-align: center;">No</td> </tr> <tr> <td>a) From wages, salary or self-employment? 1 <input type="radio"/></td> <td>2 <input type="radio"/></td> <td></td> </tr> <tr> <td>b) From government, such as Family Allowance, Unemployment Insurance, Social Assistance, Canada or Quebec Pension Plan or Old Age Security? 3 <input type="radio"/></td> <td>4 <input type="radio"/></td> <td></td> </tr> <tr> <td>c) From interest, dividends, investments or private pensions? 5 <input type="radio"/></td> <td>6 <input type="radio"/></td> <td></td> </tr> <tr> <td>d) From any other sources, such as alimony, scholarships, etc.? 7 <input type="radio"/></td> <td>8 <input type="radio"/></td> <td></td> </tr> </table>		Yes	No	a) From wages, salary or self-employment? 1 <input type="radio"/>	2 <input type="radio"/>		b) From government, such as Family Allowance, Unemployment Insurance, Social Assistance, Canada or Quebec Pension Plan or Old Age Security? 3 <input type="radio"/>	4 <input type="radio"/>		c) From interest, dividends, investments or private pensions? 5 <input type="radio"/>	6 <input type="radio"/>		d) From any other sources, such as alimony, scholarships, etc.? 7 <input type="radio"/>	8 <input type="radio"/>	
	Yes	No														
a) From wages, salary or self-employment? 1 <input type="radio"/>	2 <input type="radio"/>															
b) From government, such as Family Allowance, Unemployment Insurance, Social Assistance, Canada or Quebec Pension Plan or Old Age Security? 3 <input type="radio"/>	4 <input type="radio"/>															
c) From interest, dividends, investments or private pensions? 5 <input type="radio"/>	6 <input type="radio"/>															
d) From any other sources, such as alimony, scholarships, etc.? 7 <input type="radio"/>	8 <input type="radio"/>															
<p>P23. During 1988, what best describes your spouse's MAIN activity? Was your spouse mainly ... (Mark one only)</p> <p>Working at a job or business? 1 <input type="radio"/> → Go to P25</p> <p>Looking for work? 2 <input type="radio"/></p> <p>A student? 3 <input type="radio"/></p> <p>Keeping house? 4 <input type="radio"/></p> <p>Retired? 5 <input type="radio"/></p> <p>Other 6 <input type="radio"/></p> <p style="text-align: right;">↓ (Specify)</p> <p>_____</p> <p>_____</p>	<p>P27. What is your best estimate of your total personal income in 1988 from all sources, including those just mentioned?</p> <p>Income 1 <input type="radio"/> → \$ _____ .00</p> <p>No income 2 <input type="radio"/></p> <p>Don't know 3 <input type="radio"/></p>															
<p>P24. Did your spouse have a job or was he/she self-employed at any time during 1988?</p> <p>Yes 7 <input type="radio"/></p> <p>No 8 <input type="radio"/> → Go to P26</p> <p>P25. For how many weeks during 1988 did your spouse do any work at a job or business? (Include vacation, illness, strikes, lock-outs and maternity leave)</p> <p>_____ weeks</p>	<p>P28. What is your best estimate of the total income of all household members from all sources in 1988? Was the total household income ...</p> <p>Same as P27 01 <input type="radio"/></p> <p>Less than \$20,000? 02 <input type="radio"/></p> <p>Less than \$10,000? 06 <input type="radio"/></p> <p>Less than \$5,000? 10 <input type="radio"/></p> <p>\$5,000 and more? 11 <input type="radio"/></p> <p>Less than \$10,000? 07 <input type="radio"/></p> <p>Less than \$15,000? 12 <input type="radio"/></p> <p>\$15,000 and more? 13 <input type="radio"/></p> <p>Less than \$20,000? 08 <input type="radio"/></p> <p>Less than \$30,000? 14 <input type="radio"/></p> <p>\$30,000 and more? 15 <input type="radio"/></p> <p>\$20,000 and more? 03 <input type="radio"/></p> <p>Less than \$40,000? 09 <input type="radio"/></p> <p>Less than \$60,000? 16 <input type="radio"/></p> <p>\$40,000 and more? 17 <input type="radio"/></p> <p>Less than \$60,000 to \$79,999? 17 <input type="radio"/></p> <p>\$80,000 and more? 18 <input type="radio"/></p> <p>No income 04 <input type="radio"/></p> <p>Don't know 05 <input type="radio"/></p> <p>P29. INTERVIEWER:</p> <p>Sex of respondent: Male 8 <input type="radio"/></p> <p>Female 9 <input type="radio"/></p>															

99. COMMENTS



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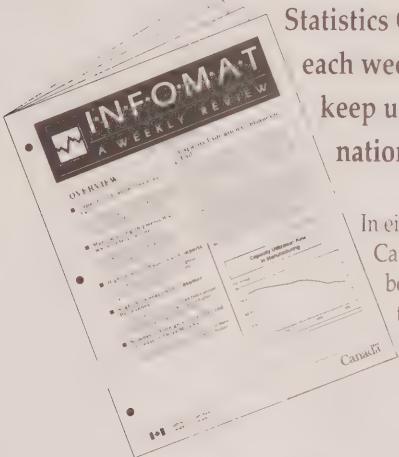


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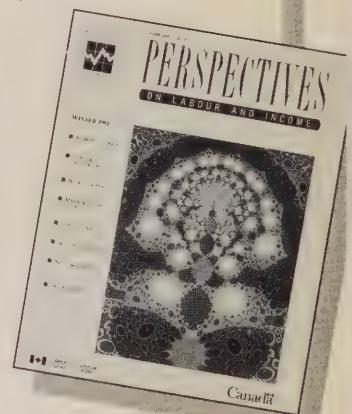
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